Regional Oral History Office
The Bancroft Library

University of California
Berkeley, California

The Program in the History of the Biological Sciences and Biotechnology

G. Kirk Raab

CEO AT GENENTECH, 1990-1995

With Introductions by
Larry Setren and Michael Raab

Interviews Conducted by
Glenn E. Bugos
in 2002

Since 1954 the Regional Oral History Office has been interviewing leading participants in or well-placed witnesses to major events in the development of northern California, the West, and the nation. Oral history is a method of collecting historical information through tape-recorded interviews between a narrator with firsthand knowledge of historically significant events and a well-informed interviewer, with the goal of preserving substantive additions to the historical record. The tape recording is transcribed, lightly edited for continuity and clarity, and reviewed by the interviewee. The corrected manuscript is indexed, bound with photographs and illustrative materials, and placed in The Bancroft Library at the University of California, Berkeley, and in other research collections for scholarly use. Because it is primary material, oral history is not intended to present the final, verified, or complete narrative of events. It is a spoken account, offered by the interviewee in response to questioning, and as such it is reflective, partisan, deeply involved, and irreplaceable.

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It is recommended that this oral history be cited as follows:

> G. Kirk Raab, "CEO at Genentech, 1990-1995," an oral history conducted in 2002 by Glenn E. Bugos, Regional Oral History Office, The Bancroft Library, University of California, Berkeley, 2003.

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G. Kirk Raab

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Genesis of the Program in the History of the Biological Sciences and Biotechnology

In 1996 The Bancroft Library launched the Program in the History of the Biological Sciences and Biotechnology. Bancroft has strong holdings in the history of the physical sciences--the papers of E.O. Lawrence, Luis Alvarez, Edwin McMillan, and other campus figures in physics and chemistry, as well as a number of related oral histories. Yet, although the university is located next to the greatest concentration of biotechnology companies in the world, Bancroft had no coordinated program to document the industry or its origins in academic biology.

When Charles Faulhaber arrived in 1995 as Bancroft's director, he agreed on the need to establish a Bancroft program to capture and preserve the collective memory and papers of university and corporate scientists and the pioneers who created the biotechnology industry. Documenting and preserving the history of a science and industry which influences virtually every field of the life sciences and generates constant public interest and controversy is vital for a proper understanding of science and business in the late twentieth and early twenty-first centuries.

The Bancroft Library is the ideal location to carry out this historical endeavor. It offers the combination of experienced oral history and archival personnel and technical resources to execute a coordinated oral history and archival program. It has an established oral history series in the biological sciences, an archival division called the History of Science and Technology Program, and the expertise to develop comprehensive records management plans to safeguard the archives of individuals and businesses making significant contributions to molecular biology and biotechnology. It also has longstanding cooperative arrangements with UC San Francisco and Stanford University, the other research universities in the San Francisco Bay Area.

In April 1996, Daniel E. Koshland, Jr. provided seed money for a center at The Bancroft Library for historical research on the biological sciences and biotechnology. And then, in early 2001, the Program in the History of the Biological Sciences and Biotechnology was given great impetus by Genentech's generous pledge to support documentation of the biotechnology industry.

Thanks to these generous gifts, Bancroft has been building an integrated collection of research materials--oral history transcripts, personal papers, and archival collections--related to the history of the biological sciences and biotechnology in university and industry settings. A board composed of distinguished figures in academia and industry advises on the direction of the oral history and archival components. The Program's initial concentration is on the San Francisco Bay Area and northern California. But its ultimate aim is to document the growth of molecular biology as an independent field of the life sciences, and the subsequent revolution which established biotechnology as a key contribution of American science and industry.

Oral History Process

The oral history methodology used in this program is that of the Regional Oral History Office, founded in 1954 and producer of over 2,000 oral histories. The method consists of research in primary and secondary sources; systematic recorded interviews; transcription, light editing by the interviewer, and review and approval by the interviewee; library deposition of bound volumes of transcripts with table of contents, introduction, interview history, and index; cataloging in UC Berkeley and national online library networks; and publicity through ROHO news releases and announcements in scientific, medical, and historical journals and newsletters and via the ROHO and UCSF Library Web pages.

Oral history as a historical technique has been faulted for its reliance on the vagaries of memory, its distance from the events discussed, and its subjectivity. All three criticisms are valid; hence the necessity for using oral history documents in conjunction with other sources in order to reach a reasonable historical interpretation.[1] Yet these acknowledged weaknesses of oral history, particularly its subjectivity, are also its strength. Often individual perspectives provide information unobtainable through more traditional sources. Oral history in skillful hands provides the context in which events occur--the social, political, economic, and institutional forces which shape the course of events. It also places a personal face on history which not only enlivens past events but also helps to explain how individuals affect historical developments.

Emerging Themes

Although the oral history program is still in its initial phase, several themes are emerging. One is "technology transfer," the complicated process by which scientific discovery moves from the university laboratory to industry where it contributes to the manufacture of commercial products. The oral histories show that this trajectory is seldom a linear process, but rather is influenced by institutional and personal relationships, financial and political climate, and so on.

Another theme is the importance of personality in the conduct of science and business. These oral histories testify to the fact that who you are, what you have and have not achieved, whom you know, and how you relate have repercussions for the success or failure of an enterprise, whether scientific or commercial. Oral history is probably better than any other methodology for documenting these personal dimensions of history. Its vivid descriptions of personalities and events not only make history vital and engaging, but also contribute to an understanding of why circumstances occurred in the manner they did.

Molecular biology and biotechnology are fields with high scientific and commercial stakes. As one might expect, the oral histories reveal the complex interweaving of scientific, business, social, and personal factors shaping these fields. The expectation is that the oral histories will serve as fertile ground for research by present and future scholars interested in any number of different aspects of this rich and fascinating history.

Location of the Oral Histories

Copies of the oral histories are available at the Bancroft, UCSF, and UCLA libraries. They also may be purchased at cost through the Regional Oral History Office. Some of the oral histories, with more to come, are available on The Bancroft Library's History of the Biological Sciences and Biotechnology Website: http://bancroft.berkeley.edu/Biotech/.

Sally Smith Hughes, Ph.D.
Historian of Science

Regional Oral History Office
The Bancroft Library
University of California, Berkeley
October 2002

[1]The three criticisms leveled at oral history also apply in many cases to other types of documentary sources.

July 2003

ORAL HISTORIES ON BIOTECHNOLOGY

Program in the History of the Biological Sciences and Biotechnology

Paul Berg, Ph.D., *A Stanford Professor's Career in Biochemistry, Science Politics, and the Biotechnology Industry*, 2000

Mary Betlach, Ph.D., *Early Cloning and Recombinant DNA Technology at Herbert W. Boyer's UCSF Laboratory*, 2002

Herbert W. Boyer, Ph.D., *Recombinant DNA Science at UCSF and Its Commercialization at Genentech*, 2001

David V. Goeddel, Ph.D., *Scientist at Genentech, CEO at Tularik*, 2003

Thomas J. Kiley, *Genentech Legal Counsel and Vice President, 1976-1988, and Entrepreneur*, 2002

Dennis G. Kleid, Ph.D., *Scientist and Patent Agent at Genentech,* 2002

Arthur Kornberg, M.D., *Biochemistry at Stanford, Biotechnology at DNAX*, 1998

Fred A. Middleton, *First Chief Financial Officer at Genentech, 1978-1984*, 2002

Thomas J. Perkins, *Kleiner Perkins, Venture Capital, and the Chairmanship of Genentech, 1976-1995*, 2002

G. Kirk Raab, *CEO at Genentech, 1990-1995*, 2003

Regional Characteristics of Biotechnology in the United States: Perspectives of Three Industry Insiders (Hugh D'Andrade, David Holveck, and Edward Penhoet), 2001

Niels Reimers, *Stanford's Office of Technology Licensing and the Cohen/Boyer Cloning Patents*, 1998

William J. Rutter, Ph.D., *The Department of Biochemistry and the Molecular Approach to Biomedicine at the University of California, San Francisco: Volume I*, 1998

Richard Scheller, Ph.D., *Conducting Research in Academia, Directing Research at Genentech*, 2002

Robert A. Swanson, *Co-founder, CEO, and Chairman of Genentech, 1976-1996*, 2001

Daniel G. Yansura, *Senior Scientist at Genentech*, 2002

Oral histories in process:
Moshe Alafi
Brook Byers
Ronald Cape
Stanley N. Cohen
Chiron Corporation
Roberto Crea
Donald Glaser
Herbert Heyneker
Irving Johnson
Lawrence Lasky

Arthur Levinson
Diane Pennica
William J. Rutter, Volume II
Axel Ullrich
Keith R. Yamamoto

INTRODUCTION--Michael Raab

As a young boy I never really understood what my dad did for a living. I just knew that he traveled a lot, worked for pharmaceutical companies, loved his job and was apparently quite good at what he did. As a child, I never recognized, nor did I focus on, the personal sacrifices he made in order to provide. Now, as an adult who has spent 15 years working in the same industry as my father, I have a clear understanding of the choices he made, the challenges he faced and the impact he had. The impact on not only the pharmaceutical and biotech industries, but on the lives of employees and most importantly on the lives of tens of thousands of people (patients) who would have lived shorter or dramatically less productive and pleasant lives.

Although my dad is certainly not someone who lacks self confidence, I am continually surprised by his ability to recognizes own weaknesses, objectively examine any failures and, most remarkably, to take those experiences and to move beyond them in a productive and enthusiastic way. I am extremely fortunate that he shares this process with me, thereby really allowing me to learn and truly benefit from his experiences and help me grow as a professional, husband and father.

He is, by far, the most optimistic person I've ever known, who has an irrepressible *joie de vivre.*

I was born in Santiago, Chile and for roughly the first 8 years of my life we lived in Latin America, most of the time in Mexico City. Those years were an adventure and I have, for the most part, only wonderful memories of the experience. Whether it was coming to the United States for home leave and discovering Sweet Tarts and Sesame Street, or whether it was living in Mexico, watching the remarkable thunder and colorful lightning storms over Mexico City, or the shock of driving by massive car accidents on the "Carretera a Toluca" (the Road to Toluca), a twisty windy highway we rode everyday to school, I have wonderful memories of living there. It has provided me some perspective/appreciation in/for life that I would not have had were it not for my dad's career choices.

One of my earliest memories of my dad is of a fishing trip he took me on with a bunch of his friends and some of their sons into the mountains of Mexico. It must have been when I was around 4-5 years old. I remember him driving us to the mountains of Mexico in a VW "Thing," a car that was manufactured from 1968 to 1979 that had no windows; an engine with no power, no roof, or in some cases a flimsy canvas roof. I believe, the major structural elements of the car were made of single sheets of aluminum foil.

Needless to say, the excitement of riding in such a car with your dad through the mountains of Mexico was an exhilarating and, at times, frightening experience for a little boy. I realize now that it was the first time I appreciated the uniqueness of my father and the wonderful iconoclasts who are his friends.

One of those is Toss Olson. Toss is a heavy drinking, bohemian, ex-fighter pilot with whom my dad would always get in trouble. Toss brought his son, Davey along on the trip and the two of us shared a tent. It was my first time fishing, and we fished for these beautiful Mexican trout using these bright red salmon eggs...I don't recall if, or how many fish we actually caught...but revisionist history being what it is, would say we caught a lot and that they were huge!

Although the majestic beauty of massive Mexican pine trees are a wonderful memory of the trip, I recognize now as an adult, it was my first glimpse at who my father is as a man, not as my dad. I remember Davey and me both waking up in the middle of the night to go to the bathroom and peering out of the tent. Instead of going to the bathroom we sat at the tent flap and watched our dads. I remember

seeing my dad and the other men sitting around the campfire, drinking, smoking cigars, telling jokes and laughing really, really loudly.

In the midst of this was my dad, telling jokes and entertaining his friends. He was the center of attention. It was my first insight into the energy and joy he gets from making people laugh, usually through bawdy, un-politically correct jokes, and being at the epicenter of the action. I also recognized for the first time his remarkable skill of being able to talk about, and have a firm opinion on, most any topic, as well as recognizing his keen desire and ability of convincing others that his perspective might, in fact, be the "correct" one. In that moment an indelible picture was made for me of my dad.

My dad and I now fish together in Nantucket, Massachusetts, with another of his iconoclastic friends, Tom Lazor. If Ernest Hemingway had a twin, it would be Tom Lazor. Tom is an ex-advertising executive who was a nurse in the Navy, a merchant marine, purportedly wrote speeches for John Kennedy, introduced us to Nantucket and also someone with whom my dad always gets in trouble. Were it not for Tom, Nantucket would not be part of our lives and, importantly, the happiest and most relaxed I ever see my dad is while we are together on the island. There is an special quality to our Nantucket, from catching fish, clamming and cooking together.

I am extraordinarily fortunate to be able to say that not only is my father an important and incredibly valuable advisor to me in business but is also my best friend.

His openness, resilience in the face of serial adversity, and irrepressibly positive outlook on life make him a role model. It is important to note that many of today's most important and successful leaders of the biotech industry were once employees of his at Abbott and Genentech. He has a remarkable ability to judge talent, build self-confidence and give people the freedom to succeed. He deserves great credit for helping to create an important industry that has changed and will continue to change all of our lives.

Michael Raab
New Enterprise Associates

September 2002
Menlo Park, California

INTRODUCTION--Larry Setren

I first met Kirk in February 1986 while interviewing for the job of director of employment and training at Genentech. Genentech had always been a tough company to join--lots of concern about cultural fit--so after meeting with and interviewing 33 vice president and director level folks, I finally met with Kirk Raab. All of the interviews up until that point were classic--much of what you'd expect when contemplating joining a new technology focused company--in depth questions about my past experiences, lots of theoretical questions and what ifs. My meeting with Kirk was very different.

I spent a warm and engaging hour with Kirk. He was disarming, funny, fully focused as if this meeting was the most important issue he was dealing with. We talked easily about our international work experiences, the good and difficult part of our lives, and what we both wanted to yet accomplish. He was much more interested in who I was as a person than the professional skills that I could offer.

Kirk's warmth and easy intimacy in our first meeting marked my relationship with Kirk as it did for many of the people he worked with at Genentech. In that first meeting I was introduced to Kirk's unusual ability to understand and get the best out of people. Kirk's ability to really know people, to guide them and have people realize their strength and value served him well at Genentech, and it served Genentech well as people wanted to perform their best for the company and for Kirk. Kirk had the natural ability to establish rapport with all of the different people that existed in a company as diverse at Genentech. As Kirk said in a later conversation, " You know, all I really do here is do people."

It was also in this first meeting that Kirk told me how he had come to Genentech after he almost died in a car crash. While still at Abbott he wrapped his speeding car around a tree. During his weeks and months of recuperating, he thought about how he more purposefully wanted to spend his life. During this time he realized he wanted to change the direction of his professional life and lead a company like Genentech, which soon thereafter came to pass.

Kirk and I had our first difficult conversation only a few weeks after my arrival. At this meeting, he was damning by faint praise, saying that though I was a good employee and a pretty good guy, I was a little different. "You chose to live in Berkeley," he said with a little disdain. "You drive a crappy car," he said with a lot of disdain. "You don't play golf," and he concluded, "so how are you going to be an effective executive here? How are you going to fit in with the executives we have around here!?" It took me a minute to realize that he wasn't joking and then I told him he was full of shit!

My response was honest though maybe impolitic and certainly immature, and I thought I blew it. But he only smiled and moved on and we finished our business. The next day, he asked me to stop by his office. I thought he was going to continue down the same path and I was tense, but he said he just wanted to check in. "Let me tell you something," he started. "You and I are going to work fine together. For someone to tell me I'm full of shit in his first few weeks at the company...I appreciate that kind of candor, and especially from a human resources guy, I need that kind of straight talk." Straight talk, empathy, guidance, understanding human nature and getting the best out of people--these are the attributes that characterized many of the relationships Kirk had with the Genentech employees who knew him well.

On the other hand, Kirk really did have this thing about cars! A few months later he asked me to drive him to the national sales meeting in San Francisco. At the time I was driving a 1978 Volkswagen diesel. I still recall the bemused look on his face as he sat in my cramped car, diesel fumes spewing. He reached to open the window for some breathable air and, before I could stop him, the window crank fell off into his hand, the window dropping open. He told me to get to the meeting as directly and fast as I could and then he just stopped talking. It was probably because of this ride that my pay accelerated pretty

fast--he thought I'd buy a better car! And I did. I bought a Honda, only slightly better. He never asked me for another ride.

Kirk was the kind of guy who went whole-heartedly after important goals without reservation. Perhaps it was Kirk's near death experience, or maybe it was due to his age--Kirk was about 50 when the average age at Genentech was just about 30--he always thought big and went after big, value creating concepts. I was always impressed with his ability to be clear about what needed doing and the vigor with which he went after those things important to him or the company. He'd work hard, often during the early morning hours, and he'd come to management committee meetings and frame out big picture initiatives when the rest of us were often thinking about items parochial to our functional areas. His ability to envision Genentech's future and to think in strategic terms was perhaps one of his abilities of greatest value to Genentech. For example, the FDA's rejection of tPA was a major crisis for the firm and though there were a number of paths Genentech could have taken, Kirk decided to confront the FDA head on and the company took a number of aggressive actions including suing the FDA (maybe not such a good idea!), but also engineering the GUSTO trial which resulted in tPA's ultimate approval.

In my shop, this crisis centered on the Genentech childcare center. As planned, it would be the largest corporate childcare center, constructed to serve 250 families, at a subsidy cost of a million dollars to the company. Most of the executives around the table--looking at a million dollar expense without the revenue expected from tPA--wanted to hold off on building the childcare center or at least do it in smaller steps. To Kirk, incrementalizing it made no sense at all. Genentech had an unwritten agreement with its employees about the center. Kirk and Bob Swanson decided to build the center despite the lack of clarity about the future of the firm relative to tPA's approval. That was typical Kirk, to boldly go after important initiatives. In fact, the entire blue print of the Genentech campus and the Vacaville site was engineered by Kirk, well before the rest of us understood the success that would later come. Kirk added a strategic boldness about business decisions to the cultural mix at Genentech.

Kirk also affected a major cultural shift in the research organization. This is perhaps one of his less known or articulated contributions to Genentech, but one which might be the most responsible for Genentech's ensuing rich product pipeline. Throughout Genentech's early days and even as late as the end of the 1980s scientific research was preeminent. It was culturally understood that if you weren't a classic molecular biologist you were considered a second-class scientist. Your worth was suspect.

Additionally, the research organization still ran much like an academic organization. Excellent scientists were recruited from academic organizations with the brief to do important fundamental research with little thought to the product application of the work. As a result, in 1987 there were over 70 research programs within the company, all competing for talent and support resources with little product focus or accountability or product prioritization. There were skunk works all over the place. Any scientist with a good idea (and there were lots of wonderful ideas) were encouraged to pursue it with an attitude of stop-me-if-you-can. During the early and mid 1980s the Genentech research organization had a reputation as brilliant and prolific, but not being very good at identifying and targeting research candidates for the clinic or product development. In fact, commercial science was not necessarily held in high regard. This was unsustainable.

Kirk changed that by showing the scientists that it was a good thing to focus on research that could result in a product that would meet an unmet medical need, with lasting value. It was good to be intellectually and scientifically involved with products. By the late 1980s Genentech was no longer doing science for science's sake. The company was doing science for people's sake. Science was about products. The culture change was hard. We feared that scientists who were forced to focus on products would leave and we wouldn't be able to recruit the best academic scientists to replace them. In fact, the opposite happened. Genentech became known as a company that was able to turn ideas into products,

and scientists got excited about this new end point to their research. They got excited about helping people. And they understood that commercial success enriched the resources available for their research.

Then there was a fundamental change in the leadership of research and development. Art Levinson became Kirk's head of R&D and he epitomized this cultural shift. Art stood up and said that if you're a scientist and you're not working toward a product, or if you are not someone supporting a scientist working toward a product, then you should not be at Genentech. This was a profound restatement, and at that point the research effort at Genentech turned very prolific in terms of new products. Kirk was fundamental to that cultural shift, but I doubt he gets much credit for it.

Also, by the late 1980s, Genentech scientists more clearly understood that other functions played a role in the success of the company. They learned the value of the team. People in legal protected important company assets, people in sales and marketing actually brought money into the company, and people in finance saved the company money by effectively handling a tax or finance issue. Everyone started working together as a team and understood that productivity, not just brilliance, resulted in success.

Kirk was a very effective boss. He was admired. People wanted to work with Kirk, and do good things for the company. He was a leader. Kirk had the unusual ability to compartmentalize his life and the complex issues that he worked on. No matter how preoccupied Kirk would be with a pressing issue, he always had the ability to be fully present for his meeting with you, as if he didn't have a care in the world.

Kirk made people understand that he trusted their abilities, so people did not want to let down that trust. Once the former vice president of human resources at Abbott told me of Kirk's reputation there as a cigar-chomping, hard-driving, ass-kicking Midwestern style of CEO who loved a very tough environment. Yet he had transformed himself into the kind of empathetic leader who was very effective at Genentech. He was the leader as coach. He made people feel his trust. He let them make independent decisions, but was always there as backstop. On a team where there were no other clear leaders, he brought new leaders along. Many scores of former Genentech employees--by virtue of Kirk's coaching and Genentech's success--have moved into leadership roles in other biopharmaceutical companies around the world.

Despite Kirk's own healthy sense of self-value and self-esteem, he had a good understanding of his own weaknesses and a good sense of humor about them. In one of our meetings Kirk reflected that he was probably one of the least well-educated people at Genentech. "How could someone with a bachelors' degree in fine arts," he said, "be the chief executive of a company with so many Ph.D.s and so many other people who are all a lot smarter than me." It was because he knew what he was capable of and because he is one of the best at "doing people."

Larry Setren
Setren, Smallberg & Associates

Oakland, California
October, 2002

Regional Oral History Office
Room 486 The Bancroft Library

University of California
Berkeley, California 94720

BIOGRAPHICAL INFORMATION

(Please write clearly. Use black ink.)

Your full name G. Kirk RAAB

Date of birth 09-27-1935 Birthplace New York

Father's full name George RuFus RAAB

Occupation Telephone Executive Birthplace New Jersey

Mother's full name ANNE MARIA Wood

Occupation Homemaker Birthplace NewYork

Your spouse/partner MARYANN Louise RAAB

Occupation REAL ESTATE Broker Birthplace ~~KANSAS~~

Your children KRISTINA (41) Los GATOS, ALYSON (39) Chicago, MichaeL (37) MENLO PARK, DEAN & JULIA (12) ANDREA (32) FREMONT

Where did you grow up? Long ILAnd, NY

Present community PORTOLA VALLEY

Education St. PAUL'S 53, Colgate 57

Occupation(s) PHARMACEUTICAL/ Biotech Exec Pres. COO ABBOTT LABS, PRES, CEO GENENTECH

Areas of expertise MANAGEMENT

Other interests or activities Golf, gardening, cooking, FAMILY (6 children, 4 children in law, 8 GRANDchildren

Organizations in which you are active KQED COLGATE, S.F. Symphony & BALLET - WAS ON BOARDS.

SIGNATURE G. Kirk Raab DATE: 06-26-02

INTERVIEW WITH G. KIRK RAAB

A Speed Boat

[Interview 1: January 11, 2002]##[1]
[Portola Valley, California]

Bugos: I've asked you in advance if we could start this oral history interview with you making some overview statements. Beginning, please, with a résumé of your career at Genentech.

Raab: My career at Genentech began with an interesting story. There was a mutual decision for me to leave Abbott where I had been president and chief operating officer. I met with my older children, I was going through a divorce at the time, to tell them that I was going to leave Abbott. They asked me, well, what am I going to do. I said: "I'd really love to live in California. I'd like to be involved with a biotech company or a small growing company. I've spent enough time living and working on a battleship. I'd like to be on a speedboat." My oldest daughter Kristina asked, "You mean like Dr. Rathmann?" George Rathmann, who had started Amgen, was a family friend. He had worked for me at Abbott. I was on his board. I replied, "I don't think I'm really the person to start a company. I'm more the kind of person to build a company." I thought it might be less like pharmaceuticals and more like diagnostics. She said, "Oh Papa. You've always been in pharmaceuticals. Isn't there any company that would be right for you?" And I said, "There's only one. But that's not going to happen because the guy who runs it is fourteen years younger than I am. Though I don't know him I hear that he's incredibly capable and intimately involved. And that's Genentech."

That was the Wednesday before Thanksgiving. We were having our Thanksgiving celebration, then they were going to spend Thursday with their mother. On Friday an executive recruiter called me about the Genentech job. I came to San Francisco the following week and had my initial interviews with Bob Swanson and a number of the other executives and board members. The process began. I had set up a whole program for myself assuming I would rent an office in Chicago and take six to twelve months to discover what I was going to do in life,

[1] ## This symbol indicates that a tape or tape segment has begun or ended. A guide to the tapes follows the transcript.

including a serious upgrade of my tennis and a few things like that. I was at work in Genentech by February, maybe six weeks later, as president and chief operating officer. It was an exciting and a magical experience.

There was one moment in the process that was very characteristic of Bob and my relation with him. He called me after we had everything resolved--ninety seven percent resolved. He called me in Chicago rather late in the evening. He asked: "Are you sure you want to do this?" I said: "Absolutely." And he said: "Well, you know, you're a big company guy." Bob had never worked for a big company. He was in the Citibank venture group, but that was a pretty small group. He said: "You know we really work long hours in a small company and I know you don't do that in big companies." I said: "Bob, when you're president of Abbott Laboratories you work *very* long hours." [laughter] He always had these images of big corporate America and how different it was. In some ways it was very different. What do you do when you see a light bulb out at Genentech? The answer is that you find a light bulb and replace it. At big companies you call the maintenance department. At Genentech we eventually started calling the maintenance department as we got bigger.

I started as president and chief operating officer on February 15, 1985. As far as my career with Genentech, it is very uncomplicated to describe. I then became chief executive officer on February 1, 1990. And I left the company on July 11, 1995. That was my résumé.

Bugos: Okay, and to give some structure to the interview, could you give us an overview statement on what you consider to be your greatest achievements during your tenure there? That is, what do you think historians should pay the most attention to?

Raab: There are three things, as generalizations, involved in running a biotech company. Any company. The discovery and development of the products. Execution, and that relates to the quality of the people. And finance. Those are the three things that I dedicated myself to. They're not profound to identify.

The Products

Raab: First, the products, which relate to the philosophy and the quality of the science, and how we maintained it. Bob and Herb [Boyer] had set extraordinary standards. Genentech was an extraordinary place scientifically. The early people like [Arthur] Levinson and [David] Goeddel, [Dennis] Kleid, Mike Ross, [Herbert] Heynecker, et cetera had already created an extraordinary high quality and competitive attitude towards science. That was already in place. The key was to keep it in place as the organization grew, which we obviously did and it has continued. It still has the best science and technology, head and shoulders over any other company--in my experience and I have lots now with lots of other people in lots of different companies. This includes Amgen, which is more successful commercially, but not in the science. And it's not just the science, but also the development of the product once you've identified the protein--in the case of Genentech--or the small molecule in the case of a more classical pharmaceutical company. How do you make sure that it's developed so you get FDA approval? Much of your commercial success depends on the quality of the claims you can make, which the FDA has approved. That is what your sales people are going to use when they go visiting doctors. So what I brought to the table was the maintenance of the extraordinary

science, as well as the very high quality in the execution of the new product development and the claims that were approved.

The Execution

Raab: Now, on human resources. So many things at Genentech had been established in principal. My job was to make them happen as we grew dramatically in size, by hiring quality people. We had some failures. You hire thousands of people and you're gonna have some failures, at high levels and low levels. The key is not to have too many. When we did have failures more times than not it came from losing sight that the raw material of the human being is more important than the piece of paper they bring in to show you what they've done in life. That's why we always had such a young population at Genentech. I was the old man at Genentech, from the day I arrived. [laughs] Yes, you want a certain degree of experience and knowledge and education. But the raw material that the person had, the self-confidence to take risks, the maturity so that those risks weren't stupid or too frequent or too large, and the energy and need and drive to see that the success of Genentech and our products was our priority in life. I don't think Genentech was ever a wonderful place as far as promoting good home life and marriages. We talked about it. We worried about it. But the time and energy that people put into the company obviously wasn't good for other activities in life. And we wanted people whose commitment was close to being absolute. So "people" was a constant in the management of the business--promoting, rewarding, changing, punishing, training, educating, developing. We thought about that all the time. Genentech had one of the first and largest corporate day care centers in the United States. It was not done entirely for idealistic reasons; it was very expensive and took a lot of energy and work. We did it because it brought great pride to the employees and it would help us recruit and keep the better people. Two keys to the quality of the people in science was their ability to publish and the very significant postdoctoral program. This was unique in industry. The culture was constantly a part of senior management's thought process. How do we keep the quality of execution at the highest level?

Finance

Raab: Finally, finance. We always worried about having sufficient funds and about how the money was spent. Biotech companies, like human beings, often make their biggest mistakes when they don't think they can afford to do things right. I've said so many times that "the longest road for getting a drug approved is a short-cut." We've seen this most recently with ImClone. Biotechnology companies have taken the short-cuts so many times, because of not having the right people to execute or because they believe they don't have enough money to do it right. Do it substantially, not superficially. We worked very hard at raising money. That paid for the quality of our execution and the quality of our science.

From the very earliest years Genentech was profitable. Biotechnology is an industry, with rare exceptions, of companies that have never been profitable, so almost nobody remembers that Genentech was always profitable. We paid some prices for those profits. We did some deals. We gave rights to Mitsubishi to all of our new products discovered over a five year period for a nickel. People say huh? Yes, five cents a share for one quarter. [laughter] So I always say we

gave it to them for a nickel. In my years, the only quarters when we were not profitable is when we bought back our R&D partnerships. In that quarter we took a paper write-off. And when we did the Roche deals we had paper write-offs for the transactions. Those were the only times, when I was there, that we lost money, and it was a transaction, non-cash loss. We didn't really lose money.

One of the great things we did was in March 1987 when tPA was at its most glorious from a publicity point of view. The stock hit its high--like fifty four dollars--which took us about eight years to hit again. TPA was supposed to be approved in a couple of months. A heroic event. We decided to go out and raise a hundred and fifty million dollars in a Euroconvert bond issue, the largest ever done in biotech at the time. We borrowed the money at three percent. Amazing. People thought we were nuts because the stock was at an all-time high, and going to skyrocket. Well, two weeks after we raised the money it was announced that we were going to have an FDA advisory committee meeting. We had the meeting on the twenty-ninth of May, after raising the money in March, and it was negative. The drug finally did get approved the following November 13 but our stock suffered from then on for years. If we hadn't raised that hundred and fifty million dollars Genentech wouldn't be the company it is today. We never would have had the funds to do what we were able to do despite the pressure on the stock from the delay. We would never have been able to do the Roche deals. The recent court ruling in the City of Hope trial forcing Genentech to pay over five hundred million dollars, which I think is a disgraceful result, will not seriously hurt the company as they have close to two billion dollars in cash. The conservative attitude toward finance never changed and in my opinion still hasn't. The same applies to science, product development, quality of execution, and people. So finance was the third major thing.

tPA Factory

Raab: Over the years there were hundreds of other things that I did, what I'd consider big or small achievements. This is a good spot to say that I hardly ever did anything by myself. I may have made the final decision but there were lots of terrific people always involved. The first thing I did at Genentech resulted from a discussion during my interview process. Tom Perkins was not initially enthusiastic about my coming to Genentech though we eventually developed a marvelous relationship. Kleiner Perkins had funded a diagnostic company in southern California, Hybritech, which was eventually sold to Lilly. Their big competitor was Abbott, which I was president of. We were pretty vicious in some of the things we did to Hybritech, and because they were having so much trouble competing against Abbott they ended up selling the company. Tom didn't like me because I had been a mean guy to one of his companies. Of course, I pointed out that that showed that I had certain abilities, but he thought I was just a big bad wolf. So when he was interviewing me he asked: "So what's the first thing you'd do?"

I had learned that there was a tPA factory design and the steel had been ordered but the construction of the factory had stopped. I said: "You should know that my first day there I'm going to reinitiate the construction of the tPA factory." He said, "That's ridiculous. We don't know yet if it's going to work." He asked: "What about gamma interferon and tumor necrosis factor?" Growth hormone had been rejected by the FDA and nobody ever thought it was going to become the drug it eventually became, including yours truly. And I said, jokingly, "You really could change the name of the company to tPA, Incorporated. That's why I would join. Tom, if we don't have tPA we don't have a company." "Ugh," he said. "That's just a waste of

money." I told him that in biologics you have to do the final approval, before the FDA would approve the product for marketing, for the facility that you are going to produce the commercial product in. The process was different in the big factory. And the first thing I did the first day I entered the company was to pull the trigger on building that factory. Thank God I did, [laughter] because it would have taken years more to approve the drug. Tom obviously supported hiring me and didn't mess with the tPA decision. How's that for an opener?

Growing up

Bugos: Great. Meaning this might be a good time to go back and discuss how your life wound its way to Genentech, some biography, how you got there, and what you had going for you when you did?

Raab: Sure. I'm an only child. My father was from Jersey City. He went to Rutgers and Fordham Law School. Was a phenomenal baseball player. He had a contract with the Dodgers, and played farm team ball but didn't make it up. He was the youngest of nine kids. His parents I never really knew. My grandfather was from Germany and my grandmother was from Ireland.

My mother was the youngest of four, from upstate New York, and a graduate of Ithaca College. Her father was fascinating in that he was an orphan when he was two, living at the east end of Long Island , and eventually had thirteen earned college degrees. He had three Ph.D.s. His last degree was a bachelors in agriculture from Cornell when he was seventy-three years old. A great, great man. He was a minister, an editor of the Syracuse *Herald*, a lawyer, a teacher, and a high school principal when he was twenty-two in upstate New York. Eventually he worked the New York State Court of Appeals for many years. My grandmother was an artist, a china painter.

My father had a mediocre career in the New York telephone company. He lived a very conservative life. We lived on Long Island and had a very happy, normal, middle class American life. Lots of social life, church-related activities, Ozzie and Harriet. Actually, my father went to Rutgers with Ozzie Nelson and Paul Robeson. I was the light in their eyes. I went to St. Paul's in Garden City, Long Island--an Episcopal private school, not the St. Paul's in Massachusetts.

Army and G.I. Bill

Raab: Then I went to Colgate. By that stage in life, I had lived just a very comfortable, secure upbringing. Not a particularly good student, not a bad student. At Colgate my freshman year I got very involved with my social life. Academics were oriented toward the classical "Gentlemen's C's". The summer of my freshman year I decided to leave school--the word drop-out didn't quite exist then--and volunteered for the draft in 1954. I became an enlisted man in the army. The army was a wonderful experience for me. I matured, cut the umbilical cord. My parents were upset with me, but the G.I. Bill was still in effect, so the deal was that I would put myself through college when I went back. I was in Europe the whole time. Traveled. I was the editor of a division newspaper. I went back to Colgate on the GI bill, and became an honor

student. I subsequently became a trustee of Colgate which, I like to say, was one of the most expensive "yes's" of my life. There's a Kirk Raab scholarship and a chair in biology now, which I'm very proud of. I had a marvelous time back in college. There were a lot of ex-GI's still in college from the Korean War. I was the president of my fraternity and the editor of the newspaper. Plus, I worked my three years and paid for college. I did have the G.I. Bill and a full tuition scholarship my senior year. One of the great happy moments with my parents was at graduation. My father handed me an envelop and in it was a check for all the money he would have spent on my college education. It was very symbolic of our relationship.

Summer Jobs

Raab: I had worked for two summers as a salesman for Vicks VapoRub. There was a very famous Vicks School of Applied Merchandising. In the book *The Organization Man* by William Whyte there was a whole chapter on the Vicks School of Applied Merchandising. It was an incredible training program in sales for all the Vicks ointments, cough medicine, and inhalers. I did that between my sophomore and junior years and it was really an exhilarating experience. Vicks had merged with a pharmaceutical company, William S. Merrell Company, in Cincinnati. That second summer I worked for Merrell and was exposed to marketing and market research in the pharmaceutical business. Interestingly, there my roommate was Jeb Stuart Magruder of Watergate infamy. Anyway, I got very interested in the pharmaceutical business. The summer of my senior year I spent in Washington with the Colgate Washington study group and did a project on the Food and Drug Administration, just when there was whole revolution in the agency. Senator Estes Kefauver was doing hearings on the FDA. I happen to be a painter, my avocation, and I shared a studio with Nancy Kefauver, his wife, and got to know him and spent some time working in his office, with the FDA and with a congressman [Francis E.] Dorn from Brooklyn. I got very interested in the pharmaceutical business.

Starting at Pfizer

Raab: Around the FDA the company they spoke worse about was Pfizer. And everything they said that was bad about Pfizer sounded good to me. [laughter] Pfizer was in Brooklyn then--it's since moved to Manhattan--and my father worked in Brooklyn for the telephone company. I came home that spring vacation and had to figure out what I was going to do when I graduated. I had a Fulbright to go to the Philippines and learn Tagalog. I had looked for Fulbrights that nobody else was applying for and got that one.

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Raab: I also had a fellowship to go a Folka school and study Folka schools in Norway, which is a special vocational education system for people not going to university but wanting advanced education in sophisticated trades. But I really wanted to make some money so I asked my father if he knew anybody at a company called Pfizer in Brooklyn. He said he knew somebody named Bill Stewart, the head of personnel--it wasn't called human resources then. I told him I'd like to get a job as a pharmaceutical salesman. It's a great business, the economy doesn't affect it much, it's got high profits, great people, and the products really make a difference. So he called

and I went in to interview and on June 26, 1959 I started as a salesman in Pfizer and have been in the pharmaceutical business ever since.

Bugos: But your college degree was not in marketing, or in any facet of business?

Raab: Oh no. My undergraduate degree was in fine arts, with a lot of political science. I just never had the courage to be an artist.

One of my favorite pieces of paper is one I can no longer find. I was obliged to take an undergraduate course in chemistry at Colgate, which was the only science course I took there. It was given by an instructor in chemistry, who eventually became department chairman. When I was elected president of Abbott he sent me a telegram that read: "I don't believe it." [laughter] One of the secrets of my success is that I have a profound knowledge of my own ignorance.

Yearning for International Experience

Raab: Anyway, I got a job as a salesman in Brooklyn and New Jersey with Pfizer, calling on doctors. I only did that about a year. I did very well and came inside to the advertising department. Then became product manager. I was quite successful in doing that. I have always wanted to live overseas. It sounded like fun. I had been to Germany and all over Europe in the service. Also, I could see that you could become a general manager and rise up the organization much more quickly. You could get broad experience in manufacturing, in running operations in small countries around the world, especially in developing countries. So I let that be known and eventually worked it so that I could move to Latin America with Pfizer. They transferred me, and I stayed with Pfizer a few years and then joined A.H. Robbins, and then Beecham, and spent a total of ten years living in Argentina, Chile, Brazil and Mexico--the majority of it in Mexico. Like going into the army, it was the next giant step for me in personal growth. It was really marvelous.

Beecham

Raab: I ended up starting Beecham's Latin American pharmaceutical operations. I worked from Mexico City for five years and for three from New Jersey. For years they had been a proprietary drug company, with Brylcream and things like that. They had gotten into the semisynthetic penicillin business with Ampycillin and had some other important antibiotics that had never been launched in Latin America. When I left we had almost two thousand employees in Latin America and a large pharmaceutical business. It was just a great opportunity. I made acquisitions, started up companies, traveled some years eighty percent of the time. There were no airline miles programs then--too bad. It was the kind of thing I went overseas to do. As a young man I could take a lot more initiative to build things, things it would be much more difficult to accomplish in a mature market. And it set the stage so well for what I eventually did at Genentech. I knew how, and wanted, to build little companies into big companies.

Abbott Laboratories

Raab: I left Beecham to join Abbott because the next step at Beecham was to move to England. After Latin America our goal was to move back and raise our children in the United States. We had lived overseas long enough. Abbott had a very large operation in Latin America that had problems. I was brought in in February 1975, ten years almost to the day before I joined Genentech. I turned around Latin America very quickly. In November 1976 I was made vice president for international operations and ran all of Abbott's business outside of the United States. In February 1980 I became a corporate group vice president running the pharmaceutical and other big businesses in the United States. In March 1981 I became an executive vice president and was elected to the board of directors. In July 1981 I became president and chief operating officer. I reported to Bob Schoellhorn who was chairman and CEO. Bob was the guy who spotted me and moved me pretty darn fast from running Latin America to being president of the corporation. It was interesting that he had the same initials as Bob Swanson, R.A.S. [laughter].

Robert Schoellhorn

Raab: And I owe a great deal to Bob Schoellhorn as I do to Bob Swanson. Schoellhorn had been president when he was promoted to chief executive officer, so he moved Jim Vincent up to executive vice president and chief operating officer. But that didn't work. Jim was probably the chief operating officer a little over a year, maybe fifteen months. Jim went on to become the CEO of Biogen, and is still chairman. I was president and chief operating officer until I left Abbott in early 1985. There was a subsequent president and chief operating officer, Jack Schuler, who also was an extraordinary guy. He had worked for me. He lasted about three years. After Schoellhorn got rid of his third president he lasted one more year and then he himself was gone. But I begrudge none of it. It was a wonderful time and for a guy who started as a salesman in Brooklyn it was a pretty good deal. I loved it and think that I accomplished a lot at Abbott. I am still appreciative for the opportunity Bob and the board gave me.

Accomplishments at Abbott

Raab: One thing I did, internationally, was shut down Abbott plants in Montego Bay, Bangladesh, Sri Lanka, Rhodesia, Egypt, Bolivia, Turkey. Abbott had plants all over the world and in some places where it was ludicrous to have one. Abbott had gotten very fat overseas, and I cut back on staff and office overhead. I consolidated much of worldwide manufacturing. Another thing I did at Abbott was to increase the size and quality of research in both the pharmaceutical business and the diagnostic business. The size of the R&D budget was comparatively small for the industry in those days. I got very involved in the science, particularly with George Rathmann, who ran the research in the diagnostic business at Abbott before he left to go to Amgen. The pharmaceutical business is its largest business now. When I was there all three of the other businesses were larger than the pharmaceuticals business. I brought in senior scientists and research people, and developed strong academic relationships. This also was excellent preparation for what I did at Genentech.

Abbott Investment in Amgen

Raab: I got very involved with Amgen, and was very interested in recombinant DNA technology, in proteins. I invested five million dollars. I wish I had [laughs]. *Abbott* invested five million dollars, on my insistence. When the board approved it, [Emanuel E.] "Manny" Papper, who was the dean of the University of Miami medical school said: "You should know Kirk that we're investing this despite the fact that most of Abbott's scientists don't support it. But we're investing because we know that it's important to you and you're important to us." We had rights, as part of that deal that I negotiated, to Amgen's first product, which was EPO, and is about a three billion dollar product today. When the product got to the point where we had to decide to take it, Bob Schoellhorn turned it down. That was the beginning of the real downfall in our relationship. It was a ludicrous decision, and I knew that then. He was influenced by a chemist who headed pharmaceutical research and didn't believe in proteins. When I became president he moved elsewhere. Abbott did sell its stock, the five million dollar investment, eight years after, for over seven hundred million dollars. That was after I left. Nobody called me to thank me. [laughs]

Abbott Research Building

Raab: Still, the Abbott years were just marvelous. I built buildings, like the science building. There was a funny story. I have a certain philosophy in working with scientists that science is bottom up and not top down. I've always kept my hands off the science with the exception of facilities, funding, and programs that promote the good science. Businessmen like me have no place in it. So many executives can't figure that out. They mess around with it and screw it up. Good scientists can't handle that. They leave, or they become weak scientists and worry about their vacations and stuff. I built this great big new pharmaceutical research building. They hadn't had a new research building in twenty years. I gave a talk at the dedication and I said: "Someday from this building is going to come a great new product and everybody will look up and there will be this giant balloon floating above this building that will say 'Eureka!'" About four years after I left, one day at home in California I got an envelope which clearly had a photograph in it. Abbott had this fabulous new product that had just been launched. It was an antihypertensive product [Hytrin] that also turned out to be very useful in treating prostate cancer. Making a billion or two today. All the scientists had gotten this giant balloon and had it floating over the building and had painted on it "Eureka!" And they had made this big sign: "Thanks, Kirk." That particular photograph is a treasure of mine.

Anyway, it was clear in 1984 that Schoellhorn and I just were not getting along. It just was not good. We were both going through divorces. Communication had broken down, and we both agreed that I should move on. He was the CEO and chairman, so I frankly didn't have much of a choice. My divorce was unhappy. I was tired of the weather in Chicago. It's a wonderful city, and I love Chicago, but not its weather. I still have a daughter there, a son-in-law, and three grandchildren. I really liked the idea of moving on. I had been there almost eleven years. I mentioned earlier about how I was contacted by Genentech. I never looked at

any other jobs. Genentech was the only thing I even looked at, and it was the right place and right job. So that's how I worked up to coming to Genentech.

The Big Company Guy

Bugos: When Genentech contacted you did they say they were looking for someone with experience in a big pharmaceuticals company? And what was it about Abbott and your experience there that made you "big pharma?"

Raab: The board was very much behind it, and Bob supported, bringing in a hired gun, a professional executive. Growth hormone had been turned down, and they were looking at this tremendous investment in tPA. The board at Genentech was great--with Tom Perkins, Dave Packard, Dave Tappan from Fluor Daniels, Don Murfin from Lubrizol, Amo Houghton who was then chairman of Corning Glass and has become a great friend. They all thought the world of Bob, just to be very clear. They saw Genentech as being not only exciting, but now looking like it was going to be a big company. Bob was supportive, but this process was hard for him. It was a search that went on for several years before I was hired. In fact, Jim Vincent, my predecessor at Abbott, was one of the early candidates. They were looking for somebody who had dealt with the FDA, had developed drugs, sold drugs, marketed them, developed big sales forces, had done all the stuff that's called the pharmaceuticals business and had done it with some degree of success. It was as simple as that. They had some good, fairly young guys. Bill Young in manufacturing, Jim Gower in sales and marketing. They had come from the pharmaceuticals industry--Bill from Lilly, Jim from American Hospital Supply. They came with relatively narrow experience and were young. The board was looking for a general manager, a president who had been a president. I had been, repeatedly, in both the Latin American and at Abbott. It was not a long or particularly difficult courtship from the time we met to the time I started. There were a few hiccups here and there in negotiating things, but basically it all worked fine.

Experience in Drug Approval

Bugos: When you were at Abbott how involved had you actually been in getting drugs approved? Had you overseen it from a management point of view, or were you directly involved?

Raab: When I became a group vice president in 1980 the pharmaceuticals business at Abbott was dead in the water. They hadn't had a new product in twenty years. As group vice president I had the president of the pharmaceuticals division reporting to me, among others. I made some giant changes. I changed the head of R&D, I changed the president, I changed the head of sales and marketing, the head of clinical research. I brought in academics. I restructured the whole pharmaceuticals business. I chaired the pharmaceutical R&D committee at the corporate level. Historically, the president of the pharmaceutical division had chaired that. I always chaired it myself, even as president of the company, because the products were so vital to all of Abbott, not just to its pharmaceuticals business. But I didn't run it. The people who worked for me did the real work. But I was very involved in the decision-making, setting the philosophy and budgeting, and where resources were deployed.

Long Timeline for Drugs

Bugos: Which products were you responsible for getting to market at Abbott?

Raab: I launched new products overseas. There were not any drugs launched at Abbott, before I left, that I was responsible for initiating the R&D on. We did submit two to the FDA. But five years was too short a period to get new drugs out. I'll give you an example. I was at the Hambrecht and Quist conference [the JP Morgan H&Q 20th Annual Healthcare Conference] last week in San Francisco. I went to hear Art Levinson's presentation on Genentech, which I really enjoyed. They have seven products in phase III clinical trials right now, which is extraordinary. Six of those I was very involved with, and I left almost seven years ago. It just takes so long to get products from discovery to marketplace because of all this pre-clinical and clinical development and the failures. Herceptin, the HER2/neu monoclonal antibody for cancer--I was intimately involved in the decision to move it through the pipeline. The one that's licensed from IDEC [Rituxa], the CEO had come from Genentech and I personally finalized the negotiations on the license with him. It's Genentech's fastest growing product. The time frame for what I established at Abbott--the benefits were reaped long after I left. That's often the case in the pharmaceutical industry and applied to Genentech as well.

Understanding the FDA

Bugos: Right after you arrived at Genentech there were some problems with the FDA that were solved pretty quickly. And you had mentioned your ties there in 1959. But how much contact had you had with the FDA just prior to arriving at Genentech? How well did you know the people there?

Raab: I didn't know the people at the FDA at all until I came to Genentech. But I guided and steered the people at Abbott. Abbott was so big that for me to have gone to the FDA just wouldn't work. The FDA just does not like to have big executives around. The president of the pharmaceutical division at Abbott almost never went to FDA meetings. But what I did was sit in the pre-FDA meetings and structure who was going, what was going to be said. Before I got there Abbott had a long history of being contrarian, of problems with the FDA. I got rid of--actually in the case of Abbott "early retired" them--the guy who was in charge of regulatory affairs, who just hated the FDA. You can't have that sort of person dealing with them. Also, at Abbott we worked on small molecules and Genentech worked on proteins. Each was controlled by entirely different groups at the FDA.

I've told a story hundreds of time to help people understand the FDA. When I was in Brazil I worked on the Amazon River for many months selling Terramycin for Pfizer. I hadn't seen my family for eight or nine months. They were flying in to Sao Paulo, and I was flying down from some little village on the Amazon to Manous and then to Sao Paulo. I was a young guy in his twenties. I couldn't wait to see the kids. One of them was a year old baby, the other was three. I missed my wife. There was a quonset hut in front of just a little dirt strip with a single engine plane to fly me to Manous. I roll up and there is a Brazilian soldier standing there. The military revolution had happened literally the week before. So this soldier is standing there with this machine gun and he said to me: "You can't come in." I was speaking pretty good Portuguese by that time. I said: "My god, my plane, my family, I gotta come in!" He said again: "You can't come in." I said: "I gotta come in!" And he took his machine gun, took the safety off, and

pointed it at me, and said: "You can't come in." And I said: "Oh, now I got it. I can't go in there." [laughter] And that's the way I always describe the FDA. The FDA is standing there with a machine gun against the pharmaceutical industry, so you better be their friend rather than their enemy. They are the boss. If you're a pharmaceutical firm, they own you body and soul. I changed the culture at Abbott to friendliness, to seeking advice, and working with the FDA. I've had wonderful person relationships, since my Genentech days, with the commissioners. I've advised presidents on selecting commissioners. I was chairman of the Biotechnology Industry Organization, and helped found it as well as the California Healthcare Institute, where I was also chairman. That gave me a lot of muscle. Genentech had a very active Washington office that I helped start. A Colgate guy ran it. When I joined Genentech I used to sit in on every one of our regulatory preparation meetings.

I should make something very clear. There are a lot of very dedicated, capable people do very important work at the FDA. Sometimes I may not agree with them or think they take too long, but I know their ultimate goal is to improve public health in the United States.

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Raab: After I joined Genentech, I quickly went to visit the FDA, which I hadn't done since 1959. But I felt that I was not this great big, powerful pharmaceutical executive flying in my Gulfstream to Washington. I was flying in the back of the bus. And Genentech was a pretty small company back then, though it had already established itself as a company that was seen as arrogant by the FDA. That's something I had to fight against constantly, fight within Genentech. It was almost Abbott over again. But we turned that around.

FDA Approval of Growth Hormone

Raab: I sat down with Elaine Esber, who was the head of biologics then [the FDA Center for Biologics Evaluation and Research] and Saul Solomon who was in charge of the division within drugs that handled growth hormone. I talked with them about their relationship with Genentech and what we should do about growth hormone. The human growth hormone used at the time, which came from cadavers, they discovered, not long after I joined Genentech, caused Creutzfeldt-Jacobs disease which some people in Sweden died of. That made it easier to get recombinant growth hormone approved. Plus, I had established this relationship with the FDA that enabled us to work with them so that we could quickly get a new NDA filed [a New Drug Application] for growth hormone. Fortunately, there had already been some additional clinical work done so we filed the new NDA, got the product approved and launched it in the end of 1985, nine months after I came. In September 1985 we hired our first eighteen sales reps for launching growth hormone.

FDA Approval of tPA

Raab: And we were then working with the FDA on tPA as well. There are two different kinds of tPA, single and double chain. Which kind would become the drug was unresolved at Genentech, and the FDA was incredibly confused by Genentech's confusion. This was an the issue of whether

the product would be lyophilized and be a powder or a liquid. Obviously it was easier for doctors if it was already a liquid but there were other problems. I quickly made the decision that it would be single chain, in the powder form--which was very controversial within Genentech. People, Bob being one of them, were disturbed about me coming in and making decisions so quickly. But that's what I was hired to do and that's what the company needed. We didn't have time to work them over and over. They needed action, and I'm prone to do that. Clearly I could make such decisions quickly as I was getting excellent advice, particularly from Bill Young in this case.

Building Sales Forces

Bugos: Okay. You had also mentioned that you built a Genentech sales force quickly. Could you give some insight into how you had built or managed the sales forces at Robbins or Beecham or Abbott?

Raab: My first real sales management experience was in Chile, and I ran Pfizer's pharmaceuticals business there. I was head of sales and marketing, ran the sales force, and started a second pharmaceutical division. I built those sales forces. For A.H. Robbins I grew the sales force in Mexico, and changed it. Starting Beecham in Latin America is really where I put what I learned to the test. I was the first employee and my secretary in Mexico City was the second. We eventually had sales organizations throughout Latin America. Sometimes through acquisitions. Mostly we went in and hired a general manager and hired managers and got the drugs approved by the government--which was easier but it still took time and work--and got pricing approvals, and reimbursement approvals, and hired people and bought cars and put health insurance programs in place. I did it all, from ground up, with Beecham in Latin America. By the time I got to Abbott it was so big. It had sales organizations everywhere. I modernized it and restructured it, but I didn't really create a sales force like I did at Genentech.

Treating the Genentech Sales Force with Respect

Raab: It's important to repeat here again that I didn't do anything at Genentech, or Abbott, by myself. The best thing I did was to get and keep a lot of great people. But I was the president, and it was pretty small at the beginning, and I was intimately involved in most everything. We had some outstanding people in sales and marketing. Jim Gower was in charge, with Dick Brewer and John Rehr in marketing and Gary Lyons, Ed Jennings, and Kim Popovits in sales management. They were, and are, great and most are CEOs today.

Historically, pharmaceutical sales reps had real limits on the amount of money they could make. They'd have a salary and a bonus program. You would make forty to sixty thousand in salary and maybe fifteen thousand dollars a year in bonus. It created a significant culture of mediocrity in the sales organizations in the pharmaceutical business. The people who were really good got promoted out or went into other businesses because their income growth was so limited. If you're a sales type you need to be motivated to make more money. So one thing we did was that there was no limit on what a sales rep could make. It became pretty famous in the industry and many biotech companies copied us. Not so much with large pharma. Large

pharma just puts masses of people out there. I remember once cutting a guy a bonus check for three hundred and eighty thousand dollars. He deserved it. He sold five million dollars worth of tPA. Why shouldn't he get a piece of that? We had a whole program of gold Rolexes that we'd give them. In the second year if they deserved another watch we'd give them some diamond things to wear on the watch. I hate to wear one myself but they seemed to like it. We treated them with great respect. We didn't treat them like robots.

At our national sales meeting--it was usually three nights. The second night we'd do a special surprise. The third night was the awards dinner, and we always had it black tie. Which was unheard of. The sales force was about half men and half women. The women would all bring evening dresses, and we had a tuxedo rental company come to the hotel for the guys who didn't have tuxedos. It gave such class and made them so proud. It made me proud as well.

The pharmaceutical industry has very tight controls on their call reports. You have to fill out forms after every call, and that encourages people to lie. The company says they have to see eight doctors, so the salespeople write down eight whether or not they actually saw eight. We didn't believe in that. We believed if we had the right people with great products and outstanding incentives then they are going to call on the right doctors. If it was right to call on one doctor and take another out to play golf then that was okay with us. So we had no call reports, which was unheard of in the industry. And we also did that because I hated the damn things when I was in sales. [laughter].

Cars

Pharmaceutical companies give every sales person a company car. They were all cheap, awful cars. Like the Chrysler K cars, if you remember those. The reps were always embarrassed driving them but, of course, they did because they were free cars. So we just said here's five hundred dollars a month, or whatever the number was, and you buy your own car. They used to laud it over the people at the other pharmaceutical companies. They'd get maybe a used BMW, but they were so proud of it. We became famous as the company whose sales reps drove BMWs.

Sales Cultures at Pfizer and Abbott

Bugos: Pfizer now has a reputation for being good to its sales people. Was that the case when you were with them?

Raab: Absolutely, but not to the degree we did it at Genentech. Pfizer was the Puck's bad boy of the pharmaceuticals industry. They were newcomers. Not like Lilly and Parke Davis or Upjohn, which had all been in the pharmaceutical industry forever. Pfizer got started in 1952 or 1953.

Bugos: And how would you characterize the sales culture at Abbott?

Raab: Very conservative. Midwestern. Seniority-oriented. In the pharmaceutical industry then there were almost no female managers. I've always played a big role in promoting diversity. Half the

population is female and it's just good for business to access the women. And I believe in it from an idealistic point of view as well. At Genentech we had an organization called African Americans in Biotech. I had lunch every six weeks or so with them as well as the gay and lesbian group at Genentech. Best meals that I'd ever get. We had an Hispanic group. A lot of the Hispanics at Genentech are bottle washers and in support roles, but they knew I speak Spanish and they were buddies of mine.

But when I tried to put women in management roles at Abbott, the managers would grumble: "Well, they've only been in their jobs eight years." I said: "Look we'll never have women in management roles if it's all based on seniority. The answer is going to be simple. You promote the women or I will. I'm president. This is not a democracy." It was a terrible struggle for me to promote women. Abbott was a much more conservative company. What I was able to do they often saw as revolutionary, and it was only twenty percent of what I would have done if I had really had full authority. But I didn't and Schoellhorn was very conservative and would get very nervous when I would do something out of the ordinary.

Building Abbott Plants

Bugos: Okay. You had also mentioned experience in manufacturing, which is another skill that a big pharma manager would be able to bring to a company like Genentech.

Raab: Yes, I had built factories. With Abbott in Latin America I built a wonderful factory in Quito, Ecuador. It's a beautiful building. Hired a really exciting Ecuadorian architect. It's an architectural statement as well as an excellent factory. I got into a lot of the details. I wrote an article on it for some plant construction magazine, a one page thing written with one of the engineers. I looked at that factory and looked at the bathrooms, and I don't know why. But we had about thirty percent more women in the factory, putting cotton in the bottles and doing more manual work. In the women's room there were eight stalls, and in the mens' room there were eight stalls and four urinals. And I thought maybe that's the reason it took women longer on their breaks. There's more of them and less facilities for them, and nobody had thought through that. Abbott's factories all over the world were all done that way. So I put in more stalls for the women. It was not a very profound decision, but it showed that a lot of the engineers and architects, who were male, just never paid attention to that stuff.

There is another funny story. I went down to see the plant in Quito, Ecuador, and I see this fire hydrant sitting about four feet off of the ground. The guy I was with said that was an Abbott worldwide specification. So I go back to North Chicago to find out why and ask Bob Barnes, head of the corporate engineering group. He said it was a spec for north Chicago, Illinois because of the snow. The fire hydrant had to be above the drifts, and they just kept that spec whether the plant was in Indonesia or India. The fire hydrants were stuck up in the air. [laughter] So I put in a system into Abbott worldwide not to have universals specs.

But the real manufacturing experience I got was with Beecham in setting up the businesses. In Latin American they had tariff barriers in all businesses, and that's why they had automobile assembly plants in all those countries as well as pharmaceutical plants. It's very inefficient. In Argentina, with all its troubles now, they're going to go back to the same damn thing, unfortunately. So if you wanted to be in the pharmaceuticals business in Latin America you need to produce your product locally. Not necessarily produce the active chemicals but you

need to make it into capsules or tablets or syrups and put it in the bottles. So I developed a lot of experience building plants, buying them, contracting with people to update them to our standards after we did buy them, et cetera. It was an area I never thought I'd be interested in but I found it fascinating.

Good Manufacturing Practices

Bugos: How many of those plants would have been built to the American Good Manufacturing Practices standard?

Raab: In Latin America, close to none. The GMP standards of the FDA would be prohibitively expensive. There's no harm in having that level of GMP in the States but it's very costly. You're not doing harm by *not* having a factory up to that standard. In Abbott Mexico we had a big IV solutions plant, for intravenous drips, and it was an old plant. It needed to be redone. It was questionably sterile. So I had people come down from the States to look at it. They were going to shut it down that day but I pointed out to them that Abbott produced eighty percent of the IV solutions in Mexico. If they shut it down then they *would* kill people because there would be no IV solutions. I had a terrible debate with them. Then when they designed the plant they designed it to the U.S. GMP standard, which is very complicated to do with IV solutions. It was so expensive that you would never make a return on your investment with the price that you could sell IV solutions for in Mexico. I had to drive a compromised standard which made all sorts of people nervous in the States. But I pointed out to them that we had been doing okay with this imperfect plant for thirty years, and if you insist on putting in your perfect plant we're just not going to build it and we're going to close it down and hurt the Mexican people. So let's make sure that we can make a safe product even if it's not to U.S. GMP. A lot of the GMP standards came out of the space program--the laminar flow hoods and air handling systems so that you could have a level of sterility that was impossible before. So I did most with manufacturing with Beecham, then some with Abbott, and a whole lot with Genentech.

Genentech's Vacaville Facility

Raab: Like Vacaville. We picked the site, Bill Young and me, on a day in a helicopter riding over that area. I was very involved in politics at that point. Ann Richards, who was the governor of Texas, wanted us there badly. I had gotten to know her, and they put a tremendous package together. There was a congressman [Thomas Bliley Jr.] in Richmond, Virginia, who was a very important guy. He wanted our factory in Richmond, and he put together some tremendous incentives. Nevada did too. California was not very good at putting incentives together. This was when Pete Wilson was running against Kathleen Brown for governor. I have never been a member of either political party, because it was in my company's best interest, and I don't particularly like either party anyway. [laughs] I went to Pete Wilson and said: "If we announce that we're staying in California that will be good for your campaign. It won't be a real big deal. But if we announce that we're leaving California then Kathleen Brown is going to make a lot of hay out of that. So here's what we want." We wanted to stay in California and not have to deal with all the problems of moving elsewhere. Turns out Willie Brown disliked the other Brown family--Pat Brown and Jerry and Kathleen. Pete Wilson knew this. So he got together with

Willie and the two of them put a package together that was worth thirty-five million dollars. We looked around and Vacaville was a wonderful site. A lovely community, good schools, a good economy, with a good sales tax base from all those outlet stores you pass on the way up to Tahoe. That was an important decision. We had a big ceremony in Vacaville. Willie Brown was there, as was Pete, who was still governor--maybe thanks in part to Genentech. The investment in the plant, I understand, is now close to four hundred million dollars.

Bugos: So in terms of the skills you brought to Genentech, we've touched on manufacturing and research and product development and sales and marketing. At that time a lot of CEOs in pharmaceutical companies were coming up through the marketing ranks, rather than through research, which is where they tend to come from today.

Raab: Yes. Merck is an interesting one to watch. There have been epochs where CEOs come out of research, and other epochs when they come out of the business side. Sometimes they're attorneys. Very few CFOs [chief financial officers]. In my generation Roy Vagelos at Merck was probably the only CEO to have come out of research. Most all of us came out of sales and marketing.

Raab's Role in Genentech Sales and Marketing

Bugos: So in Genentech's appraisal of your skills, would they have most appreciated the skills you brought in sales and marketing. Or is it even fair to characterize your experience that way?

Raab: Right. I assume you have read some of the press about me. I'm always characterized as the sales and marketing guy, particularly when there was criticism of Genentech's sales and marketing. And I did start in sales and marketing. But at Genentech I spent much less time in sales and marketing than it sounds like. For simple reasons. We had very good people in sales and marketing. It's not rocket science. It's not a profound activity. It's good sense. It's getting good people. Products like ours were intellectually interesting to both the sales rep and the physician. Much of my career was spent selling antibiotics, and I always look at antibiotics like detergents. Nobody needs or wants a new one. [laughter] Who needs a new detergent? Antibiotics are kind of that way.

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Raab: My role in Genentech sales and marketing was blown out of proportion. I mean I take full responsibility. No Pontius Pilating of it. I was president and CEO and the buck stops here. If anything, if I had to do it over I'd probably have put a little more time and energy into sales and marketing. The U.S. government took legal action against Genentech over some practices and the company settled with them after I left. I've never been privy to the eventual settlement where Genentech paid a fine to the government. I think Art Levinson did absolutely the right thing in settling with the government, paying the fine, and getting that over with. It helped him promote an image of purity: "We're now going to be a good company." By the way, I consider Art one of my greatest achievements at Genentech. Not that I made Art who Art is, but I promoted him over and over again. I did not make him CEO. [laughs] That was the one job I did not give him. But I certainly did a lot to prepare him for that. I always hoped he would succeed me but I didn't think it would come quite so quickly.

Raab: If I had spent more time and energy I probably would have modified some of the sales practices. I don't think Genentech did anything that, in my opinion, was harmful and wrong. There were probably some inappropriate things. Things that we didn't need to do, and we would have been just as successful without doing them. When I got there it was five hundred people, it grew to thirty five hundred or whatever, and was growing like rapid fire when I left. So I was often dealing with bigger picture things.

I was dealing with industry matters. The industry needed a leader and there was nobody but me there to create the powerful organization we had. The timing was right, as Clinton came in as president. I supported him. I was involved in his first campaign. I did not support him the second time. Got to know him, Al Gore, Hillary, all very well. So when healthcare reform came I was able to lead the fight against it, which was very important for our industry. And I personally believe, for the country. It was a disgrace. We needed healthcare reform. Still do. But not that. I felt that that was a priority for me, and a role I could fill. So I spent less time in the details of sales and marketing. I was involved in the decision to add a hundred more reps, or the decisions on compensation, or the decision on what products we give greatest priority too, but not on some of the smaller details. Again, though, I don't want to imply that I was not responsible. I was!

A COO Under a CEO

Bugos: Okay. In terms of the level of details. You had come from Abbott, where you were in a CEO-COO type of relationship, into Genentech where you had a CEO-COO type of relationship. Did you have any concerns about what it would be like to be a COO again under a CEO?

Raab: Gigantic. It's not what I wanted. But Genentech was worth being a COO for, and I'm certainly glad I did it. I like to say you're sitting next to one of the luckiest guys in the world. But I knew it was a tough row to hoe. You're not the captain, you're the first mate. Here I was number two but with a lot more experience than the number one. Both of us very strong-willed people. Both came at things differently, different educational backgrounds. It was not an easy process ever between Bob and me. It was always a challenge. I always said we had a marriage without sex. [laughs] We worked hard at it. At times we would get testy with each other. At times we worked wonderfully together. I think the net result was pretty darned positive.

Bugos: So you interviewed with him before you took the job?

Raab: Hours and hours. I probably spent twelve hours total interviewing with him before I took the job.

Bugos: Did he make it clear to you what sort of experience he thought you had that would be complementary to his?

Raab: Yes. He never expressed doubts about my experience. That little story I told you about the hours we worked. He had doubts about the big company guy [at Abbott]. He checked all my references. He may have been concerned about my aggressiveness.

In the Company of Only Children

Raab: We were both only children. At one time at Genentech, of the top executives, six of the nine were only children. I spent a lot of time in China; I helped start a biotech company there after I left Genentech. It's going to be an only-child society. I never dealt with anybody who had more than one child unless they had twins. I often wonder what that next generation is going to be like, with three-quarters of the leadership all being only children. Only children are different. You have no rivalry at home. You have nobody to compete with in your home when you're growing up. You live an adult life because it's just you and your parents. There is a tremendous support system. Not if you have screwed-up parents, of course. But nobody is competing for their time. You come out of it very secure. And probably significantly less sensitive to peers, than one who grows up in a multiple child household. Bob and I, as well as the others, came from that environment.

Bugos: Are you suggesting that influenced the corporate psychology of Genentech?

Raab: I don't think there's any doubt about it. Bob used to say that we want people who drink from the end of a fire hose. That was one of his favorite sayings. There was a lot of beating up on each other. It was tough. It was a locker room environment. I changed that a lot. When I got there it was a pretty sexist culture. There was one woman, Shirley Clayton, in the senior management. I would never accuse Bob of being against women, it's just the way it was. The guys loved the put-down. The macho-fraternity kind of environment. I wouldn't be surprised if the only-child mentality was part of that. Only children are very determined.

Bugos: But it didn't sour you from your decision to go to Genentech?

Raab: It was a wonderful decision. I didn't hesitate about it. I knew the risks. But I'm a risk taker. TPA was a risk. There was the risk of whether Bob and I could work together, because I had just ended up not working all that well with Bob Schoellhorn. But I did all that with my eyes wide open.

There was a big *Wall Street Journal* article the day after I started, and Bob and I had an argument about that article. It talked about changing the way we dealt with the FDA, and Bob took that as criticism. And I said: "Right. But you brought me here to set things straight. To fix them. It's not all broke but it can be better."

TPA, Incorporated

[Interview 2: January 25, 2002] ##

Bugos: Last time we talked you mentioned that when you joined Genentech you thought it could almost be called tPA Incorporated because tPA was so important to Genentech. Between 1985 and 1990 you spent a lot of your time making Activase as important to the company as it was. I'm hoping you could start this interview by laying out the Activase story.

Raab: In that period of time there was nothing that had a greater impact on Genentech than tPA. Fortunately the company is now much broader, with a particular orientation to anticancer drugs. It was what enabled us financially to be successful. The expectations of its success gave us the valuation in the stock price that enabled us to raise all the capital that we did to build the company. This included motivating Roche to make its initial investment. TPA was the driving force to give the company its heroic dimensions.

We also have to recognize that, in the end, tPA was not at all the success that people expected it to be. The financial community had very little experience in truly evaluating potential sales of biotech products at that stage. There were only two or three products on the market sold by or from biotech companies: insulin with Lilly, alpha interferon with Roche and Schering, and growth hormone from Genentech. Only one was sold by a biotech company. EPO came after tPA's approval but around that same time. The financial community, the research analysts, was made up almost all of former scientists. They were reveling in the glorious potential of biotech without knowing the reality of the marketplace. Genentech's tPA story has some marvelous successes--GUSTO being one of them [the trial for Global Utilization of Streptokinase and tPA for Occluded Coronary Arteries]. But to this day it has never achieved the therapeutic usage once expected. I personally think patients would be better off if the whole class of thrombolytics were used automatically with heart attacks. To this day I believe they are still used in not much more than fifty percent of heart attack patients. I also have no doubt that tPA is the best and can assure you that I would want it administered if I or a loved one ever had a heart attack. Concern over tPA's limited success was the driving force behind our decision to do the Roche deal. And yet, as I said, it supported their investment. It's kind of amazing, and kind of sad.

So tPA on the one hand is good, because it gave Genentech its heroic dimension, and on the other hand it is good because it made the Roche deal possible, which was the single most important thing I did at Genentech. Both the first and second Roche deals are what enabled Genentech to be what Genentech is today--one of the most successful drug discoverers and marketers, certainly in biotechnology. It's smaller than Amgen, but if you look at the pipeline Amgen has had only two successful drugs which is pretty meager comparatively. Same with Immunex. The Roche deal, and the vision of their management both initially and today, allowed Genentech to have the financial resources and the ability to operate independently that allowed Genentech to be the Genentech it is today. You don't go over to Genentech today and have a sense of Roche, even today when they could have much more control than they did in my day.

The Price of tPA

Raab: Now back to tPA. There was lots of controversy over the twenty-two hundred dollar price. I was with a group of cardiologists, advisers to us, and I noticed the cardiologists wearing Rolexes never complained about the price and the ones with the Japanese watches always complained. I showed them that if we lowered our price to fifteen hundred dollars, which was still twice the price of streptokinase, we would have had to eliminate all R&D at Genentech. Which was ludicrous, obviously. We had to sell at that price. There was a hearing in Washington many years ago in front of Congressman Henry Waxman. Roy Vagelos who was the chairman and CEO of Merck and I testified. There was criticism of the price of tPA. I didn't point it out in the hearing, but I said to Roy afterward, that if you look at the price of Mevicor annually [Merck's cholesterol-lowering drug], it was significantly higher than tPA. And that was something people could probably avoid taking if they had decent diets. TPA saved their lives at the moment of a heart attack.

Bugos: So how, exactly, did you figure the price? By calculating how the alternative therapies were priced? By adding up your entire development costs and dividing that by expected doses?

Raab: We calculated it every way possible. We had outside consultants, some of the most knowledgeable academicians from Princeton and Stanford. We had market research. We had our sales forecasts and figured what they would do for the income of the company and compared that with the amount of money we needed to continue to develop the products we had in the pipeline. That all came into the picture. We looked for the "you son of a bitch" factor. [laughter] Where was the number where people just said: "Too much." That number then--and prices are much higher today--was around thirty-five hundred dollars. We had all this input, and in business there is no right and wrong answer. Finally Bob Swanson and I sat in his office one day and we had to decide, after reviewing all the research and advice. We decided that we'd each write a number on a piece of paper. And we each wrote down twenty-two hundred dollars, so we knew that was the price. There was a lot of input, but in the end it's a subjective decision that somebody had to make. A very Solomon-like decision. Obviously, the board of directors approved our decision.

TPA as a Manufacturing Problem

Bugos: To a degree tPA almost worked too well because patients only used it once. Did that figure into setting a high price? After that pricing and income experience did you change your perspective on the importance of chronicity?

Raab: TPA was a serendipitous event. If you look at everything else Genentech has worked on, starting with insulin and growth hormone and DNase, Pulmozyme, the cancer drugs--they were all chronic administration drugs, like EPO. A scientist at Genentech, Doctor Diane Pennica, was at a meeting in Stockholm and heard a presentation by Doctor Desiré Collen from the University of Leuven in Belgium. He had identified the protein. Genentech had a business development guy go over to Belgium and license the protein. That was 1982 or 1983. The protein was not discovered by Genentech.

But you needed significant quantities to make tPA work in the body and it was a very large protein; the molecular weight is very high. At that time there was nobody in the world who could manufacture it in pure and industrial quantities. The greatest accomplishment in the tPA story, in addition to realizing the value in the license and moving it ahead in the trials, was in manufacturing it. That was Art Levinson's first really big project. He threw himself into that, along with many of the best scientists at Genentech, who immersed themselves into designing the plant and scaling it up. It was profound. Nobody had made kilos of a protein that size. Lilly was the only other large scale manufacturer of proteins, but insulin is a very small molecule compared with tPA.

Going on with the tPA story, we had the negative FDA advisory committee meeting, which I mentioned earlier, on May 29, 1987, and then got it approved on November 13. Which was rather extraordinary--to have a negative advisory committee meeting and then to have the drug approved that quickly. We had a vice president of product development, a clinical guy who joined us from Duke University, Ralph Snyderman, who is now dean of Duke Medical School and chancellor of the Duke medical center in Durham. He just took on the job of getting it approved and working with the FDA. Successful deans are politically savvy people. Ralph proved with tPA he was just a tremendous leader. As always, he had plenty of support from some incredibly capable people.

Slowing tPA Sales

Raab: Sales in the first month were very exciting. Unfortunately, we had on the horizon this trial, the ISIS-3 trial [the Third International Study of Infarct Survival], which was done in Italy. The results were available, as I remember, in March 1991. That was a trial comparing mortality with streptokinase and tPA. It had an equivocal result, and sales of the product had slowed down dramatically as a reaction to that trial and aggressive, low pricing on the part of streptokinase salespeople. Our stock took a big hit when we announced that we had stopped producing tPA because our inventories were sufficient to meet demand for some time. That was obviously a message to the financial community that sales were not continuing to increase as they expected.

What I'm working up to is the Roche deal. TPA had been launched December 1987, so it was aggressively marketed throughout 1988. As I said, in September 1988 we had to announce

that we were stopping production. If you look at the price of Genentech stock from March of 1987--when it was at the top around fifty-two, fifty-three dollars--up to the Roche deal announcement, which was February 2, 1990, there was a significant decline. Obviously, there was the major stock market decline in October 1987 as well. I think it got as low as fourteen dollars. When we started the Roche negotiation we were at twenty one, twenty-two dollars. We had tPA growing, but slowly, growth hormone doing reasonably well but not with great growth, and our pipeline was fabulous. Genentech had always been profitable, so everyone was looking for earnings growth.

The July board meeting of 1989 was a very difficult board meeting. We were going to have to lay off hundreds of people if we were going to continue to be profitable. We had a pretty lean administrative function--where we spent money was on R&D and sales. We still had to get sales growing so to cut back on sales and marketing would make things worse. From frying pan to fire. And to cut R&D was to cut our throats. It was the heart and soul of the company, the pump of its life blood. But we put together some proposals of what cutting back on R&D would look like. The board was not willing to do that, which was certainly the right decision. I can assure you it was a very difficult board meeting and no decision was made. It stimulated Bob and me to decide to look for a "strategic relationship." That was the term used but we didn't know what form that would take.

A Strategic Relationship

Raab: There's a special story. I just knew we had to do something significant--something mergers and acquisition related--so I had talked with Fred Frank from Lehman Brothers, whom I had worked with for years at Abbott. Fred was considered the best healthcare banker. He had taken Cetus public. He had not been a banker for Genentech. Genentech had always worked with Paine Webber, Hambrecht & Quist, and First Boston, who were all great. Fred was Mr. Healthcare. Bob knew him. I talked with Fred about what it would look like to do a strategic relationship. I also talked with Joe Perella from Wasserstein Perella, whom I had known from when he was at First Boston. To get their perspectives. They thought there were some pretty exciting opportunities.

On the Thursday of this particular week, the second week in August 1989, Bob and his family were going to take the train from Oakland to Tahoe where they have a wonderful home. It's neat to take the train up there, once. You see different views from the train than you do driving. I called Bob and said I had to talk with him. I had picked up some café lattés for us on the way over. He came out and sat in the car in front of his house. His wife was packing up their car. I said: "We have to sell the company." He said: "You're right." We had absolutely no disagreement on that. He had been going through the same thought process himself. We knew it was the only solution because we were going to destroy it otherwise. Selling the company had the risk of destroying it too. But we were adamant that we could find a way to do it so that it wasn't destroyed. We sat there for an hour, until they almost missed their train. They went up to Tahoe, and we talked once or twice more that week. Clearly, we were also worrying about the outcome of the ISIS trial which was going on in Italy with tPA. We had no idea what the results would be. Negative results would be devastating.

Meeting the Bankers

Raab: Then we set up a conference call with Tom Perkins. We decided we needed an attorney present. John Larson, managing partner of Brobeck, had never been Genentech's attorney. He and Tom Perkins were close, and he had done a lot of work over the years for Tom. John was on the call so we'd have legal advice and attorney privilege. On the call we decided to go to New York and meet the bankers. The following weekend--we all went on a Sunday--we went to New York. I had set up a meeting on the Monday in the morning with Joe Perella and lunch and the afternoon with Fred Frank at Lehman Brothers. We had dinner at La Cirque, the old one, and after dinner drinks at The Links Club. The four of us talked for hours, it was a very interesting evening, and we decided to go ahead and hire them. That Thursday, I think it was, we organized a telephone call with the board of directors, and they approved our moving ahead, with Lehman Brothers being the lead and Wasserstein Perella backing them up. We had a series of board meetings over the coming months, some live but mostly telephonic.

Preparing the Deal

Raab: I can't remember when we brought in John McLaughlin, who by that time was in California from Washington as general counsel. He was the next person we brought in over the wall, and was involved within weeks of the start. We decided to prepare a book about the company and hired a consulting firm, named PA Associates in London, to do this for us. We didn't want an American firm to do it. We used the facade that we were going to look for an international partner for our foreign business, not anything to do with selling the company. Then we brought in Jim Gower, who was head of sales and marketing, to work with PA Associates. There was nobody else in the company who knew, except for my and Bob's secretaries. And we prepared all the materials. Fred Frank began exploring options with companies, obviously not mentioning Genentech, beginning in late September. Lou Lavigne, our CFO, was also involved by then.

We had a board meeting in New York in October 1989, the day of the earthquake in San Francisco. The board meeting was at Lehman Brothers. We put in a poison pill at that time, and talked about the whole thing in great detail. A side comment on that meeting. When deciding on the poison pill we asked each board member what they did in their companies. Dave Packard said, "Well, Bill and I decided if someone tried to make an unfriendly takeover of HP we'd just shoot the bastard."

After that board meeting a group of us had dinner together--Swanson, Lavigne, McLaughlin, Gower and me--with Bob and me leaving for Switzerland the next morning. Of course, the Giants were playing Oakland, and we were all thinking we *wanna* go watch the game. The heck with dinner, and we all got up from the restaurant and went back to our hotel to watch the game and saw the earthquake going on. What a surprise. My wife was weeks away from delivering twins, so it was a pretty frantic evening. Everybody was fine and there was no damage to Genentech. The next day Bob and I went to Switzerland with Fred Frank for our first meeting with Roche, at the Dolder Grand Hotel in Zurich. That began the negotiation, which was challenging process.

The only company in the States that we had any real conversation with was Merck. In the end they felt that they would end up making Genentech into Merck West. And they didn't think

that was a good idea. They could pay to build a Merck West cheaper than they could buy Genentech. They were never all that big on proteins. Fred Frank touched base with others, but the only company we had any serious discussions with was Roche.

Letting Genentech be Genentech

Raab: Fritz Gerber, the chairman of Roche, had the vision, along with Jürgen Drews, head of R&D, and Henri Meier, the CFO, of letting Genentech be Genentech. It was clear from the beginning that our independence was what they wanted as much as what we wanted. They initially bought fifty-one percent and bought another sixteen percent over the next five years. There were tons of negotiations around price, but much more complicated negotiations around governance. If you look at the governance stipulations they were pretty severe in impeding Roche from being able to mess around with us. Obviously we couldn't go out and make a billion dollar acquisition which would dilute their ownership. We couldn't sell the company or do certain things to undermine their ownership position, but outside of that there was very little power they had over anything else. The agreement considered a way, at pre-established graduated prices, for them to eventually buy the company, or not.

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Raab: This created both a floor and a ceiling on the stock price. There was no way the stock price would go much above what they could buy the company for, and they could buy it at any time. There was not much chance it was going to go much below a ten to twenty percent discount to that price. Frankly, Fred Frank forecasted that and that's pretty much the way the stock acted for the next five years, just as forecasted. It was a profound and original agreement. Credit goes to many different people.

GUSTO trial

Raab: We suddenly had a lot of money, and lot of security. Nobody was going to acquire us, the stock was stable, and we were free to do what we needed to. First of all, the GUSTO trial. The GUSTO trial was one of the other great achievements I take pride in. First, it was successful in the end and proved tPA was better than our cheaper competition. Secondly, it showed to the physician community, the cardiologists, that we were behind the product. We spent sixty million dollars to do a trial that big, and that's putting your money where your mouth is. Doctors bought into that and it enabled doctors who were under pressure to use cheaper streptokinase to continue using tPA. It was a powerful marketing tool, and once we had results it became an even more powerful marketing tool. If we hadn't done the Roche deal we never could have afforded to spend that kind of money on that kind of trial, sales would have declined, and who knows what would have happened to Genentech.

We geared up our research, and geared up our development activities. We started doing in-licensing deals, moved into monoclonal antibodies and cancer. For example, the IDEC deal which I personally signed and concluded the final negotiations. Virtually every product that Genentech has on or close to the market today is there because of the money we were able to put

into them because of the Roche deal. We poured money into DNase and it's probably the fastest drug ever by a biotech company from time of idea to market. It was less than five years. That never would have happened without the Roche deal.

Second Roche Deal

Raab: To finish the Roche saga in my time; obviously there was more once I left. The end of the first deal was July 1, 1995. That was the end of the quarter when Roche could buy the company at an established price, or not. If they didn't buy it then a lot of things changed. They no longer had the automatic right to buy the company at a pre-established price. At this point they owned about sixty-seven percent of the company. After that date there was a very complicated formula by which the non-Roche board members had to decide that whatever the price Roche offered was in the best interest of the minority shareholders. Other aspects of the governance agreement changed as well.

We didn't know what Roche was going to do. The stock market was speculating. Half the people said they were going to buy the rest of it, half said they weren't. Obviously nobody knew. In my opinion, Roche really didn't know. And it's not knowable because we struck a new deal before July first. [laughs] It was clear I was not going to get a commitment from Fritz Gerber on whether they were going to buy the rest of the company. It was clear that our stock was going to go way down if they did not buy the rest of the company. We would be somewhat in the same circumstance we were in five years earlier, though not as extreme. We did have a lot of cash. So we negotiated the new deal, which turned out to be even better than the first one. It was my last act at Genentech. And, again, I am very proud of it.

We had a put and call in the deal. Fortunately, they eventually called it and bought the company for about eighty dollars a share. Then they went on to do the brilliant things they did, by relisting the stock. Through that, and this is the key, Genentech is Genentech, Art Levinson is the CEO, and it continues to be a wonderful research and development and marketing machine. They have two billion dollars or so in cash now. They hope to launch, within the next two years, three or four new products. Anti-cancer drugs are skyrocketing. Both HER2 for breast cancer and the IDEC product, Rituxan. Anything you want to ask me about all that?

No Messing Around

Bugos: Lots. The key to this success seems to be Roche. Were they inclined to behave like that, or did you make them?

Raab: There were a lot of people in the senior ranks of Roche who would have loved to become a *lot* more involved with Genentech, control us. Gerber, Meier, Drews, and Kessler wouldn't let anybody at Roche mess around with us. There would be little surges. Some lawyer or somebody would try to mess around and I'd pick up the phone and call Armin Kessler, the chief operating officer at Roche, or if necessary Fritz Gerber. We met with them regularly. I became a participant in Roche counsels on pharmaceutical research and development. As did Art

Levinson. And we had just a marvelous relationship with Roche. I'd give seventy percent of the credit to them, and thirty percent of the credit to the fact that we continued to be damn good.

Bugos: How much of the credit would you give to the contractual agreement that you signed? Could that have prevent them from acting badly?

Raab: Absolutely. Personally, I believe they would have done it anyway with the wonderful cast of characters they had, but there is no way of knowing because the contract was there. I don't remember that we ever pulled it out of the drawer. But everybody knew it was in there.

Operational Cooperation

Bugos: So below the top corporate levels, did Genentech and Roche increase their cooperation on operational issues? You had worked on interferon, you started to do some automated screening of their drug candidates, you started using their sales force in Europe.

Raab: We did not use their sales force in Europe until after I left. We set up our own organization in Europe, and they were not happy about that. We coordinated distribution with them, but we had our own promotional sales force in Europe. We had a headquarters in Basel, and a guy running Europe who we hired away from Roche [Kurt Kopp]. We had a good relationship with Roche, but we had employees all over Europe. With the second deal they received foreign rights to all of our drugs and we closed down European operations. The interferon license to them, of course, was years before, that was in the early 1980s. That was just coincidental to our deal with Roche.

Bugos: Some of the problems you were having in maintaining the market for tPA were in Europe--with the ISIS trial and the Wellcome Trust patent suit. Were you expecting that an alliance with Roche would help you out with those?

Raab: No. TPA was licensed to Boehringer Ingelheim, as was gamma interferon and tumor necrosis factor. That was all part of an equity investment by Boehringer Ingelheim, just as I joined Genentech in early 1985. We didn't have any tPA rights in Europe. So tPA in Europe was never a factor in the Roche deal. Roche knew about the ISIS trial, and knew it could go one way or another. They knew that was part of the risk, relative to our U.S. sales, they were taking in their investment. The ISIS failure probably embarrassed Roche briefly, in 1991, and probably made us look like heroes for having done the Roche deal. But that was very transitory, and not material. Once we had the results we started planning for the GUSTO trial. We were on our way again.

Bugos: So lacking any real operational cooperation between Genentech and Roche, it really is possible to portray this simply as an investment by Roche rather than a strategic alliance?

Raab: The original deal was an investment by Roche. Yes. The subsequent deal, in 1995, was a strategic alliance. It was a very sophisticated financial deal. The strategic relationship fundamentally changed, because they had rights to Genentech products outside of the United States and there is a lot of product development done jointly. The relationship was then revised when they purchased a hundred percent of Genentech and then subsequently did an IPO. I do not know the details of that since it happened after I left.

Hostile Takeover

Bugos: Okay. Another line of questions. You mentioned that you were driven to the Roche deal because of your unwillingness to sacrifice research and development. Others have suggested that you acted out of the fear of a hostile takeover because your bubble in the stock market had burst.

Raab: I think that's a very valid point. Our stock was so low compared to what most people saw as our value. I had this vision that our stock got so low that Abbott did a hostile takeover and I was left running a division of Abbott after I had been president of Abbott. And I had no money because the stock price was below my option price. [laughs] A nightmare. Not that I believed that would really have happened.

We were very concerned about the hostile takeover. That's why we put in that poison pill in the process of doing the Roche deal. We clearly had to do something. If we had continued as we were we would have had to cut expenses. If we had cut expenses that would have hurt a hostile takeover because they would have been getting a weaker company. If we cut expenses the stock might have gone up some, for a short time. Nothing compared to what it eventually did. Yes, we were concerned about a hostile takeover. But it wasn't the driving force.

Bugos: Then why so much secrecy in the months leading up to the Roche announcement?

Raab: Because we didn't want a hostile takeover attempt during that process. We didn't want the world to know that we were in play. We didn't want to go into play. We wanted a deal that we were managing for our shareholders. Somebody might offer a higher price but not let Genentech be Genentech as a result of a hostile takeover. Maybe Roche would counter. They had tried a hostile takeover for Sterling Drug some years earlier. Kodak ended up with Sterling, and Roche was very lucky they lost that one. Maybe Roche would have just bought us then, and owned a hundred percent without the governance agreement. It gets back to the point about how important the governance agreement was. Genentech would not be the wonderful place it is today if some large pharmaceutical firm had bought us in 1989 and like an amoeba absorbed us, which is what big companies often do. I think what we did, in the Roche-Genentech deal, was profound.

Bugos: Would shareholder value, that is in 1990, have been substantially improved had you allowed active bidding?

Raab: I don't think so. Shareholders got a good deal. They got thirty six dollars a share for half their stock. Plus, there was a substantial amount of money, about five hundred million dollars, put into the company so the stock they remained with went up in value. Whether shareholders would have been better off if somebody had simply paid thirty-six dollars a share for all of it is hard to guess. I don't think anybody would have paid forty-eight dollars a share. Frankly outside of a few flippers--and I don't care about them--I have no doubt what we did was best for our shareholders.

Negotiating the Price

Bugos: Which brings up the question of how you did set the price. Did Fred Frank just do a due diligence valuation on you?

Raab: It was "a negotiation." It was unbelievable. On November 26, 1989, my twins were born. On December 11 my father died. We really finished the Roche deal by early January even though we were finalizing it for the February 2 announcement. Roche took the PA Associates book. It was a very sophisticated volume on Genentech. Roche took that and did their valuation on the company. They took every product we had in development and put a value on it.

I remember the day--it was a week after my twins were born--in the Dolder Hotel, when Bob Swanson got very angry, very angry. It was Kessler, Meier, Gerber, Bob and me. Fred Frank was not there. We had to make sure there were no offers being made. Gerber said to Bob and me: "We can't get above the three number." Meaning thirty dollars a share. Bob's mind was still in the mid-forties by that time. It became a difficult, not pleasant discussion. He was very upset. [laughs] Armin Kessler used to smoke big cigars. In the midst of this moment, after Gerber said this, Armin takes this great big cigar out and starts to light it up. Bob barks: "Don't you light that with me in the room!" [laughs]

Bob and I left the meeting. It was a cold, terrible day in Zurich. Lots of snow. We left the room and I said: "Bob, you and I are going to take a walk." He says he's going to go grab his coat. I say: "No, we're going to walk without our coats. We're going to get cold out there, let the reality sink in." He and I walked around the golf course there overlooking the lake. So we're walking around the golf course, freezing, wet shoes. We probably walked for a half hour and came back in. I said: "What you're going to have to do is let me go back in and get this thing back on track, or you should go back in and get it off track." He agreed. Bob and I had dinner that night. It was the single nicest dinner we ever had together. There's some wonderful little village in Switzerland where they carve manger scenes. Horribly expensive and the exchange rate was also horrible then. But we both went out and bought these manger scenes for our families and had a lovely Italian dinner that night. Anyway. I went back in. Talked to them, and we were back on track. Bob's "black hat" role helped and my "white hat" did the deed.

There were four or five products where they did not have the same forecast that we did. We agreed that they would present to me, first, their forecasts which reduced their valuation of the company. Then I would present an argument. It would be just Kessler and me. We went back to California, and they sent over their numbers. Jim Gower and Bob and me and McLaughlin and Lavigne looked it over. By this time the human resources guy was involved too, Larry Setren, and we had a New York law firm, Wachtell Lipton [Wachtell, Litpon, Rosen & Katz], involved as well. Then I flew to London. I always called it "my seven-dollars-a-share trip." I met with Armin Kessler and an American business guy who was with him at a hotel in London. We spent eleven hours in the room. Never left the room. I had flip charts and everything. It was one of my great sales moments. And we passed the three number and ended up getting thirty-six dollars a share.

Bugos: My impression was that Fred Frank didn't let the two companies talk alone?

Raab: No. That's not true. I wouldn't say I negotiated the final number. I convinced them that their valuation was wrong, so I convinced them to up their valuation. Fred did, with Henri Meier, the final negotiation on the price. The mechanism of the deal, the governance arrangement, John McLaughlin played a major role in negotiated that. And Wachtell Lipton particularly, though Brobeck as well, as attorneys, negotiated with Henri Meier and the Roche attorneys. The lawyers, inside and outside, negotiated much of the governance agreement. Lou Lavigne also played a key role.

Periodically, Fritz Gerber and I had a phone conversation about some critical issues. I also talked with Henri Meier frequently. Road blocks were developing, like on how our stock options were being treated. That became a very serious negotiation, at the end, and very important to all of us obviously. At the very end, we talked about my becoming CEO and Bob's future role. There were discussions directly between me and Roche about that, though Fred was completely aware of them. Someone else I must mention is Tom Perkins. He was a critical advisor to me during both negotiations. He also played a critical role with the board, with Bob, and at certain points with Fritz Gerber.

Bugos: On the governance agreement, did you have any models to follow?

Raab: No. This was all pioneering stuff.

Bugos: So none of the other pharmaceutical mergers, and there was a wave of them then, set a model for you?

Raab: No. It was a creative act. It was fun too. It was a very exciting time. Dramatic, because of the secrecy involved. Where were we, and all that. Brobeck actually bought all of our air tickets over that time.

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Announcing the Deal

Raab: On the day it was announced, the press release went out, we had a press conference at the same time, we brought all the employees up to this empty warehouse, close to two thousand people. It was big empty warehouse space where Genentech has its Ho-Hos. The night before we hired some events people to put Astroturf on the floor and put palms in and white bridge chairs and build the stage and do all that stuff. The way we dealt with it is we said we lent this space to Brobeck, one of our law firms, as they were having a big meeting. Word got out into the legal community that Brobeck was merging with some other law firm and they were taking this space to explain to their employees this supposed merger.

There was one leak. A kind of funny one. A guy came to me, a middle management, facilities guy, a week before. He said: "I think something big is going to happen here. Are we merging with somebody?" He said: "The fire department just told me that we had applied for a permit to have this big employee meeting in one of the warehouses." We needed a permit from the fire department to bring two thousand people into a room, so we had the attorneys apply for the permit through the South San Francisco fire department. I said: "No. It's for the law firm. We're going to let them use it."

At the end of the whole thing the lawyers were quickly drafting volumes of documents, and there was the usual last minute stuff. We did this thing pretty fast, considering how original and complex it was. The holidays didn't help. The first meeting was the end of October, and we announced on the first of February. The final meetings of the board on this were long and complicated as well.

The biggest challenge in the end within the company was the management change and my becoming CEO, Bob becoming chairman, and Tom Perkins becoming chair of the executive committee. Bob was not happy about giving up being CEO. I was not going to stay unless I became CEO. Roche wanted me to be CEO. I can't say, and wouldn't say that they wouldn't have done the deal otherwise. They said they wouldn't, but I don't know in the end if that would have been true. That was a tense time, negotiating an arrangement with Bob and what his role would be, up until the final board meeting when we approved the deal. But in the end it all worked out fine.

It was a major event. It wasn't a Ho-Ho, just a meeting. By the way, Ho-Ho's are Genentech's traditional Friday beer party. Herb talked about the company and how much he supported the deal. Bob talked about the future of the company and how excited he was in his new role, and about me becoming CEO. And I talked about how there would be no real change, except that we would have more money and the stock would hopefully go up. So it all, internally and publicly, fell together very well.

Employee Reaction

Raab: The reaction ranged. Some ex-Roche employees weren't very happy about it. I think the [Genentech] employees were very nervous and very concerned, particularly the more senior employees. They thought it was going to be the end of Genentech. That one day they were going to look out and see a Swiss flag flying over Genentech. As we told Roche, the only thing that's going to prove it to those employees is reality.

Obviously, we needed our shareholders to approve the agreement. There was plenty of controversy among them, but in the end a very high percentage voted in favor. It took a lot of work by Bob, Lou Lavigne and me to make that happen. We were successful because they realized it was in their best interest.

Some of the Ho-Hos were structured. More formal. One was the Ho-Ho on the anniversary of the founding of Genentech. That's when we give awards out to people. Their nine-year awards. We didn't have ten year awards and fifteen year awards. There was one about thirteen months after the Roche deal was announced. We had mugs made with Roche-Genentech on them. At the anniversary Ho-Ho the executives always serve champagne to the employees. We'd go around and pour champagne for the employees. And we'd put on some silly show. That year we all wore *Liederhosen*. They're German, not Swiss, but they looked Swiss. Fritz Gerber was there and grumbled: "We don't wear those in Switzerland." [laughs] But nobody knows that here. By that time, a year later, everyone knew the deal was a success so we could laugh at it and celebrate our future.

Bugos: Do you think employees took greater notice of the deal, or the fact that there was the change at the top?

Raab: It's hard for me to comment. I think people first worry about themselves at a time like that--can I be the scientist I want to be, am I going to get laid off, what about my stock options? I think people worried more about that than the management change. Even the press was more about the merger than about me. It looked like an evolutionary process.

Becoming CEO

Bugos: So how exactly did that conversation start? Everyone knew someday you'd be CEO, that you wanted to be CEO. Swanson knew that. But how did that work itself into the conversation? You had gone for five years with that in the background then suddenly, here it was.

Raab: As I mentioned earlier, Bob and I had our struggles over the years, but there was never an issue that I wanted to become CEO. I never confronted him with it, until this time. The conversation started sitting on a Lufthansa flight back from Switzerland from one of the meetings. I said to him: "This is the time I'd like to become CEO." He said: "You came as COO and that's the way it should stay." I said: "Well, I'm not going to stay. I've decided, if I don't become CEO with this deal then I'm going to move on." He was very upset with me, because that could affect the deal. He said: "What if they won't do the deal?" I said: "That's a possibility." He said: "Are you threatening me?" I said: "No, I'm not threatening you. Fact of the matter is that I've thought this through and it's my life and this is the way I feel about it. I didn't expect this to be a pleasant conversation and we're going to have to work through it." That was probably late in November, early December. Tom Perkins played a very important role, as he did periodically, in ameliorating difficulties between Bob and me. Mediating issues. He did a significant job in doing that so that the deal worked and it was announced in a very positive fashion.

Perkins' New Role

Bugos: As part of that management shift Perkins became chair of the board's executive committee. How important did that committee then become? And did Swanson assume a much different role as chairman than Perkins had played?

Raab: The executive committee didn't function at all. It didn't before and it didn't after. We may have had a formal meeting once or twice over the years. We would talk, the three of us, as three individuals. But not with minutes as an executive committee. Being chairman of the executive committee was a way to keep Tom involved in the company at a level higher than just being a member of the board of directors. And he was until he resigned in March of 1995. He had an important role in the second deal, which was partially negotiated on his yacht in the Caribbean between me, Tom, and Fritz Gerber, the Roche chairman and CEO. Dick Munro--one of our board members, former CEO of Time Warner, a fellow Colgate graduate, and who knew Fritz well from the IBM board of directors--participated as well. He was very helpful.

Swanson's New Role

Raab: Bob's compensation and his role? Those were just purely negotiated. He was trying to establish some very specific responsibilities for himself. He wanted to continue getting a salary and other benefits. Subsequently, he and I negotiated new contracts. Bob had a second contract that he developed a year or two later, that reduced his role in the company but gave him benefits for a longer period of time, gave him an office, et cetera. That's when he physically moved out of Genentech. That would have been early 1992, I think. Then I negotiated a new deal. We had golden parachute contracts, which were a pretty big deal. Mine particularly. It was inappropriate for me to continue having that. So we renegotiated my employment agreement with the company. Which turned out to be pretty important to me, as I left sooner than I expected.

Departure from the Company

Raab: By the way, if you want to discuss my departure from the company, I'm fine with that. If you want to incorporate that into this Roche story.

Bugos: Okay. Then why don't we do that right now. And let me just say, to establish some empathy, that I have young twins too and have to deal with Bay Area real estate. [laughs]

Raab: Do you know about my departure?

Bugos: Only what I've read in the papers. That you asked for a two million dollar loan guarantee from Roche so that you could buy a new house and somebody in the company considered that inappropriate and brought it to the board.

Raab: Yes, and no. What happened was that I was building a house in Woodside, a very large wonderful house, which I obviously don't live in any more. Not that there's anything wrong with this place. [laughter] I had borrowed a lot of money, first because I didn't want to sell stock. I felt that the stock was going to go up, one way or another. We started building the house in 1992, and now we're in 1995. So I had borrowed a ton of money to build this house. Second, once I got into the discussion with Roche there was no way I *could* sell any of my stock. Even if I wanted to. And I had gotten myself to the point where I couldn't borrow any more money against the house under construction. You can't borrow money against stock options. I borrowed all I could against the equity in my house in Hillsborough. So I didn't have recourse.

I had borrowed money off and on over the years from Genentech. The year before I had finally paid off, after all my years with Genentech, most of the loans I had from Genentech. One problem resulted. Because I sold a lot of stock to pay Genentech I had a gigantic tax bill in April of 1995. Millions of dollars. I was building this house, and I had no money. I couldn't borrow any more. USB, the Union Bank of Switzerland, had been very generous to me in lending. I didn't want to--and this is where I made my very foolish mistake--I did not want to go back to the Genentech board and ask them to loan me money again. Swanson had always been quite difficult about that.

The executive who ran the USB office in San Francisco said to me: "You know, if Roche would guarantee it, if Fritz Gerber called up the chairman of UBS, we could give you more

money just on a note." I said: "Ah, what a relief." I knew by July it would be one thing or another. There was either going to be a new deal, or they would have bought the company, or it was all going to have freed up. I just had to get through July. But we're talking about two million dollars, including my tax obligation. On the yacht trip in the Caribbean I talked to Fritz about it, and he said: "Sure." He went back, and a number of things evolved.

His people back there said that rather than a phone call to the chairman of UBS that there had to be a document, some sort of piece of paper. If anything like that happened, naturally it would have to become public in the proxy statement that would announce the new deal between Roche and Genentech. "That would be very inappropriate," I said, "to see that Roche was doing me a favor while I was negotiating for Genentech." So it didn't happen. I never received anything from Roche. Some other things did happen.

One, I wrote Fritz a note thanking him--the infamous smoking gun. It was just a little piece of note paper. I wrote, thanking him for understanding and wanting to help me and it's too bad it didn't work out and I know we're going to have a long and healthy relationship between Roche and Genentech. A ten sentence letter. I had a temporary secretary, and she put a copy of that in the file. It all happened just because of that little piece of paper.

Then, I did go to Genentech's board in May and asked them for a loan, which I hated to do. They weren't very happy about it, but did it. Lent me the money. Then we approved the deal. Nobody will deny that it's a terrific deal.

Then we got the proverbial shareholder lawsuits. A young lawyer going through my files, as they always do when you have that kind of litigation, found this piece of paper. The board of directors then examined it with our New York attorneys and decide that what I did was inappropriate, and cause for termination. They basically fired me because of that. I want to be clear that I never questioned their reaction or fundamental decision. I was amazed, though, by how they went about it.

Board Reaction

Bugos: Not everybody on the board felt that way?

Raab: I think not.

Bugos: So how did those who wanted to fire you get the upper hand?

Raab: I don't know. I think if Tom had still been there it could have been handled differently.

Bugos: Or at least that it would not have been as publicly abusive toward you.

Raab: Yes. What I did was inappropriate. And stupid. And I've always said that. I was and am appalled. I mean I have a wonderful life and I'm very happy, but still I have a strong melancholy feeling about departing on that basis. I became tarnished by it. I understood, and can understand, that the board would have decided: "It's time for you to move on. Let's work out this transition." I didn't have a godfather there, which Perkins would have been. The fact that they fired me and that press release was issued was abusive. That was, in my opinion, a few

board members. Bob Swanson, I think. I don't think so, I know so. John McLaughlin, and then certain board members. I think Herb Boyer was sincerely angry at me. He thought that it was immoral, unethical, wrong, what I did. So I think Herb became an antagonist after being a really close friend. I don't think I've talked to Herb since then. A couple other people just turned on me because they thought it was wrong. There were a few who didn't like me. And I probably didn't work hard enough at courting, as you should, your board members. I now advise CEOs a lot better on how to deal with their boards as a result of my experience. I think it was a combination of all those things.

John McLaughlin

Bugos: John McLaughlin was corporate counsel, at that point. A senior vice president. Was he looking out for Genentech's legal exposure? Can you speculate on his motivation?

Raab: John is immensely capable. I played the main role in promoting him from being head of our Washington office to being general counsel. He was an outstanding general counsel. He's very smart, very hard working. I promoted him to senior vice president and gave him other responsibilities, like public relations, business development. John always had a very close affiliation with Bob Swanson. He admired Bob, he liked Bob. Bob liked John. I think that John never felt as close to me. And he felt that I never had the trust and the confidence in him that Bob did. And that's true. I was closer to other people in the company. Despite this he was an incredibly important executive and counsel to me. It should be clear that I always admired his abilities, contributions and opinions. I think a big piece of it, in my mind, is that I have dealt my whole career with attorneys. I happened to have gone to law school, though I'm not an attorney. Attorneys tend to see things in very black and white fashion. See the world as right and wrong. I think the world is fundamentally gray. That when you examine issues you need to see the degrees of grayness, not whether they are right or wrong. I think John really thought what I did was wrong. He was very sincere. "Kirk did something wrong. He's got to be out of here." I think he honestly believed this.

But if it was me calling the shots, I would have looked at a grayer, complex thing. I would have said let's sit down and talk this thing through. Let's not bring in lawyers and make it into an inquisition, which is eventually what the process became. I can say with great certainty that I am not bitter and get great pleasure from observing Genentech's and Art Levinson's ongoing success.

A Phenomenal Deal

Bugos: Do you think there was any genuine concern about the deal you struck? Or any deeper concern about how well you had been running the company that encouraged them to look for an excuse to fire you?

Raab: I don't think anybody who knew anything about the facts had any doubts that I had struck a phenomenal deal for the company. I really don't. I've never heard that. Somebody like John McLaughlin was completely involved in it. And Fred Frank, publicly and in every other way,

said that we negotiated, again, a great deal for Genentech's shareholders. Fritz Gerber at times got so damn mad at me I kept thinking he was going to say no on guaranteeing the loan. And if he had said no it would have been no. Either way it never affected my aggressiveness in getting the best deal for our shareholders.

Among other things, I had so much Genentech stock that just my crude self-interest would have been served by doing the deal rather than getting the loan. I could have stopped construction on the house. I could have paid my taxes six months later and paid the penalties. I could have gone to the Genentech board, which I actually did do. There were alternatives.

I negotiated very tough with Roche and it resulted in a fortune for Genentech stockholders. I can't say everybody believes that. I don't know what people remember or think today.

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Raab: With the press, when people are indicted, they're often convicted in the minds of the public. Reporters would write as if I did something I didn't do. For years, people wrote that I got kicked out because I actually borrowed two million dollars from Roche. That's just the way it is. I've paid my price for what I did, then maybe a little more.

But I had the most wonderful job in the world for more then ten years. And I'm very proud of where the company is today. It's just wonderful how well Genentech is doing. I played a significant role in it. What more can you ask of life when you start as a salesman in Brooklyn?

Other Departures

Bugos: A few months before the second Roche deal Tom Perkins ended his long affiliation with Genentech, and a few months after it Bob Swanson resigned as chairman. One sees a sea change in very top management about this time. Can you speculate on why these departures happened in the same time span?

Raab: They were completely independent. Tom was disturbed by certain positions that certain attorneys were taking in this negotiation with Roche. There had been a lot of tension between him and Bob Swanson at the time and I think Tom just said he had had enough. It had been twenty years. His wife had just died, and he was very lonely. The two of us spent an evening together on his yacht, and he was not a happy man at that stage in life. I think he had just had enough.

Bob's giving up the chairmanship--I have no idea. I literally do not know how that happened.

Bugos: Do you know if after your departure, and before Swanson's, whether he re-engaged with Genentech?

Raab: I have no doubt he would have tried to have more engagement with Art Levinson after my departure. Whether he actually did, I don't know.

Richard Munro

Bugos: Okay, Let me ask about Richard Munro, a board member who became chairman upon Swanson's resignation.

Raab: As I mentioned, Dick and I went to Colgate together. We were ex-G.I.s at Colgate. Dick is a couple of years older than I am. He had three Purple Hearts. I knew his younger brother, who was also an ex-G.I. at Colgate, better. In the early fifties, from the end of World War II to maybe 1956, colleges had a core of ex-G.I.s because of the G.I. Bill. You tended to know who the ex-G.I.s were. I got to know Dick fairly well. We weren't close friends. He was in a different fraternity. He was in Phi Gamma and I was an A.T.O. But I had followed his career, which was very illustrious. He was really the force behind *Sports Illustrated.*

Now as to how Dick joined our board, I think it began that his children are diabetic, so he's very involved in the Juvenile Diabetes Research Foundation and the American Diabetes Association. John Potts, who was on our board and was chief of medicine at Harvard, knew Dick through some of those activities. So when we wanted to bring in a new board member, we hired Spencer Stuart to help us recruit a new board member. They came up with Dick's name. I hadn't had contact with him. He was very interested in medicine. His boys took insulin created by Genentech and produced by Lilly. It was as simple as that. He just seemed like a terrific board member. And that proved to be the case. He was an outstanding board member and we had an excellent relationship.

Bugos: As a board member was he very involved? Did he display an inclination to become chairman?

Raab: He was involved as a good outside board member and never showed any interest in being chairman. As I said, he was on the IBM board together with Fritz Gerber. That was a nice added touch. He was chair of the compensation committee, which was important. [laughs] But he was involved with his own issues, with the Warner-Time Life merger and all that drama, then with he and Steve Ross running Time Warner. He lived on the East Coast.

On my demise. Dick is a moralist. He prides himself in his ethics. I think Dick, at the very end, became an antagonist of mine. He sincerely thought what I did was wrong. I saw him a few times after I left and we continued our good relationship.

Dick is a very gregarious guy, so he was an active participant in board meetings. Some didn't say a whole lot. He would ask more questions than some. He was always very interested. How he became chairman, I don't know. Roche probably had a big role in that. Gerber did know him and then over the years from meetings with our board.

Members of the Board

Bugos: Who were the more active members of the board?

Raab: John Potts had been there for a long time. He was a director, on our scientific advisory board, and a consultant to the company. I've re-established my relationship with him in recent years. Linda Fayne Levinson was very active. She hadn't been on the board a long time. She used to

like to come up to Genentech after the board meetings and spend the day. She was the first female partner at McKinsey, then she was involved with American Express, and then Northwest Airlines. Her husband was a television producer. Not the Barry Levinson. [laughter] She helped us in many respects. Dave Tappan was very involved. He was the retired CEO of Fluor Daniel. They constructed most of our buildings. Tom Smith, CEO of VHA, was very helpful. And of course, Herb was always involved and important. I can't not mention Dave Packard. He didn't say much, but when he did it was almost always significant. Periodically I'd go to him for advice, and it was always sage. As I mentioned, Tom Perkins was a key member. Finally, the two Roche members, Armin Kessler and Jürgen Drews were very constructive, helpful, and supportive board members.

Board Meeting to Oust

Bugos: So what was it like at the board meeting when they voted to oust you?

Raab: There's that word "ousted." Someone once joked that "ousted" should be my middle name. Yes, there was a board meeting where they went around the table and made the decision on me. I was not present in the meeting.

Once a year we'd go to offsites for board meetings. That year it was at Pebble Beach. Even though I was the CEO and the host, unbeknownst to me, Wachtell Lipton, the law firm we had, was invited. There were about five attorneys there. I didn't know they were coming. The board meeting was fundamentally focused on my situation. That was the second week in June. It was a pretty complex meeting. It was also Armin Kessler's last board meeting; it was Franz Humer's first board meeting. He was the new Roche COO. Armin was retiring. All the spouses were there, so we did some pretty elaborate entertaining, and Pebble Beach is pretty elaborate. There was this lovely social event, and inside it were these meetings, which were pretty intense and unpleasant, about ousting the CEO. It all took me by surprise. I knew it was going to be a significant subject, because I had called all the board members and told them about the situation. What surprised me was that the board told the senior management about the situation before talking with me. Most of the time they met without me.

Then they created a subcommittee of the board, chaired by Tom Smith [C. Thomas Smith], who was a great board member and is a great guy. On the committee was Dave Tappan, Linda Levinson, and Herb Boyer. They would investigate and make a recommendation to the board about my situation. The Roche directors were excluded from all these discussions. So they hung around, which they weren't really happy about. They knew about it but weren't part of the meetings. The subcommittee had some meetings. I knew no details.

Their last meeting was at the Marriott Hotel near Genentech. They interviewed me for a long time. There were outside attorneys there. I had an attorney by then. They also interviewed all the senior executives. That was a Wednesday, then they met again on Thursday. I remember so well. I had lunch every six or seven weeks with an organization in Genentech called African-Americans in Biotech. It was a wonderful organization that I helped found. We put groups in other biotech companies, and worked with Howard and some of the historically African-American universities around the country to stimulate students to get into biotech. Anyway, I was having lunch with the group--it was about forty people--and in the midst of the lunch I got a call from Smith saying that they had decided to recommend to the board that I be fired. I

remember going back into that lunch, and it was hard. They were such great people, I spent another hour with them, but all I wanted to do was go cry in a closet somewhere.

Then there was a board meeting in New York City, the seventh of July, I believe. Although I went to New York they didn't invite me to attend the meeting and communicated only through an outside lawyer. That's when they did have a vote. I think the announcement about me was on the eleventh of July, on a Monday.

There was a special aside to my departure. I called my three older children on July 3 to tell them what was happening and that I thought I would be leaving Genentech. A little while later my son Mike called. He lived near Boston, and was a vice president at Genzyme and is now a partner at NEA [New Enterprise Associates]. He asked what I was doing at 4:30. I said nothing. So he said why don't you pick me up at the the San Francisco airport. He and my daughter Kristina were with me during that time. The next week, Mike also flew to New York to be with me as the board meeting was going on. He was a great support. That's when family really counts and mine is wonderful.

Resignation

Bugos: And the official mechanism was that you submitted a letter of resignation?

Raab: Oh, I did submit a resignation. The press release didn't read that way though. I don't think anybody believed I resigned. [laughter] Clearly I wouldn't voluntarily just resign. It was not my decision.

Two weeks later I was out of my office. I was gone and they fired my secretary, which I thought was pretty shitty. A lot of executives left after that. It was natural. Art wanted to build his team. He and I communicate periodically. We have a very simple and uncomplicated communication. I bring them ideas from companies I'm involved with. I've *never* talked with him about running Genentech. I have congratulated him on certain events.

Wife's Insider Trading

Bugos: So another ethical issue, that may or may not be material to this, was that during the first Roche negotiation your wife was involved with some insider trading.

Raab: She is my ex-wife [now] and she certainly was. I think that tarnished me, and helped in my eventual demise, even though I didn't have anything to do with it. In the press release that the Securities and Exchange Commission eventually did, which was about the settlement with her and her brother, the SEC explicitly exonerated me from having any knowledge or anything to do with it. I spent a lot of time being deposed by the SEC, as did she. It was a sad affair. She didn't do any insider trading, her brother and his friends did, but she was the tipster. This brother wasn't employed. He has three children, lives in Texas, and hasn't had a job in years. His wife was pregnant, there was no money, no insurance. What Mollie did was tell him to buy

some Genentech stock, that there's going to be a big deal with Roche, and he could make some money to help pay their medical expenses.

But he then told some other people and these were people who thought they were pretty shrewd. Clearly they weren't. He never would have done this himself, he's just an ignorant guy in these matters. They bought futures on the stock. They invested thirty thousand dollars and made six hundred thousand dollars in an hour or two with that inside information. That's so stupid. The New York Stock Exchange gets it immediately. They look at the names. It always happens. We received a list of names from the New York Stock Exchange of people who had done a lot of trading at the very end. It was the third of February. I got a call from Mollie, and she said she had to come over and see me. I had already heard from our attorneys that there had been some funny trading and they had names and were looking at them. They had about thirty. All of the others were just coincidental. She came over and told me that the Securities and Exchange Commission had called her brother, who had called her. She told me that she had tipped her brother off. I just walked over to the assistant general counsel's office and asked to see the names. There was my brother-in-law's name. I told him immediately that he was my brother-in-law, and the little bit that Mollie had just told me. He didn't have any money so I had to pay his fine, and I paid for his attorney and her attorney. It cost me about half a million dollars.

Bugos: And cost you some reputation. Even though the SEC said you had nothing to do with it, did that tarnish you in the eyes of the board?

Raab: I think it depends. Who knows? It couldn't be positive. Perkins could understand how this might happen. Dave Packard was very nice about it. It turned out someone in his family had done some insider trading years before. He said it didn't even get in the newspaper in those days. He was a terrific help. Whether Dave Tappan or John Potts or others felt deep inside like I had done something wrong, I don't know. It was sad. I eventually told the employees at an employee meeting. Some were pretty upset at me because it tarnished Genentech too. That the CEO's wife does something like this and it's in the newspapers. People don't read the newspapers all the way through. In the Bay area in those days everybody owned some Genentech stock. I think that people were ashamed of it. I was. You just have to move on and run the company. It certainly made my first day as CEO of the company a lot less fun.

Bugos: It also points out how difficult it was to keep this deal quiet, especially from a wife expecting twins.

Raab: Absolutely. You couldn't hide something like that from your wife. Travelling to Switzerland every other week. I wouldn't either. That's not the way I live with my wife. For the record, we are no longer married and I am very happily re-married.

Summing Up

Bugos: So we're running out of tape. To sum up, about the impact of your departure on Genentech or the biotech industry in general.

Raab: I think my departure did Genentech no harm. We can't know for sure, because you can't do a double blind trial on what I would have done if I had stayed longer. Art had grown and

developed. It was good that he had come from science because I was a business guy. Art drove the settlement of the situation with the federal government, and the settlement with UCSF on the patent lawsuit. I think new CEOs clean the slate, get those things behind them. Which is smart. I would have done that. I settled the Lilly lawsuit when I became CEO. I am very happy with my life since. And I learned a lot. And I beleive some of the companies I now work with--Connetics, OGS, Bridge, Applied Imaging, Medgenics--have benefitted. And Genentech continues to be an extraordinary company.

Four Generations of Genentech

[Interview 3: February 8, 2002]##

Bugos: Before the tape started, just now, we were talking about how to identify other people who would be good to interview on Genentech history.

Raab: I can comment on potential people, in order of importance, who would be worthwhile interviewing further on.

You could put Genentech into four generations. To simplify. The first generation was the Swanson generation. The second was the Swanson-Raab generation. The third is the Raab generation. The fourth is the Levinson generation. There is cross-over on each one of those generations. Bob and I came and left on particular days, but there was a lot of heritage that we left that blended into later times.

First, the Swanson generation accomplished the creation of the company, the making of recombinant DNA technology useful, and the beginning of the acceptance of it--with Lilly taking the license on human insulin and getting it approved, manufactured, on the market. And this generation marked the beginning of other biotech companies--Amgen, Chiron, Cal Bio, Genetics Institute, Genetic Systems, and Cetus particularly. I'd talk to Bob Byrnes, Tom Kiley and Dave Goeddel about the first generation.

The second generation--the Swanson-Raab generation--was marked by when I joined Genentech in February 1985, and was when we began the tasks to be an integrated pharmaceutical company. Bob was CEO and I was COO. We were evolving and growing. We launched our first product with human growth hormone, and launched our second product with tPA. We began to be in the pharmaceutical business, meaning we were commercially manufacturing product from the raw material, starting with the fermentation of the protein, filling vials, and making finished product to sell to pharmacies and hospitals to administer to patients. We had all the complexities of the pharmaceuticals business, all the classical disciplines. We had quality control, marketing organizations, sales people and incentive plans and field management. We set up a Washington office, became involved in lobbying, in the FDA, in industry organizations--like the Pharmaceutical Manufacturers Association, the merger of two biotechnology organizations into BIO, which I was the first chairman of, and the

California Healthcare Institute which I was also first chairman of. So we began to play a significant industry role as a pharmaceutical company more than as a research boutique biotechnology company. We began to have legal matters, licensings, litigation over patents, which is part of the pharmaceuticals industry in a classical sense. Our employee population grew dramatically, so we had human resource challenges and structural and cultural changes. We started paying taxes and had a treasury function. We had been a public company on NASDAQ, but then listed on the New York Stock Exchange. It was an exciting moment, to ring that bell.

Listing on the New York Stock Exchange

Raab: How we came to do that? Bob and I were very comfortable listing on NASDAQ and assumed we always would. We had an individual investor, an impressive guy, though I can't remember his name right now. He came to me and said, "All great companies list on the New York Stock Exchange." I told Bob what this individual, whom he also respected, said. Bob said, "Right. Maybe someday we can be part of the Dow and the S&P 500." With that we put into place plans to list on the New York Stock Exchange.

When you ring that bell, you're the first trade in the morning. The first trade on the day when you list is the purchase of a hundred shares of your stock by your CEO. The second trade was my buying a hundred shares, so we rang the bell together. They give you the ticker tape, and I still have it. You see your trade going across the board, and you ring the bell and open the Exchange. Then there's a big luncheon with the board of governors. You spend some time on the floor with the guys selected to handle your stock. It's a big moment. That's some of what it meant to become an integrated pharmaceutical company and symbolic of Genentech's second generation. You should talk to Bill Young and Lou Lavigne.

Third Generation

Raab: The third era was the Raab era. It began with the signing of the first Roche deal, when I became CEO and Bob's role diminished dramatically. He moved out of the company and set up an office in San Francisco. It was fundamentally mine to run, which I did for five years. During that period we set up operations in Europe and Canada and maintained a very good relationship with Roche. We had two Roche members on our board--Armin Kessler and Jürgen Drews--they were very supportive and functioned as investors. As I liked to describe them, we were close second cousins. They were not involved in our business *per se*.

The fundamental business and management issues were to expand our portfolio. We had had a dry spell. So what we did was to reorganize product development. During that second era I did not have research, but I did have development. We brought in Ralph Snyderman to begin to put in a solid foundation for development. He was succeeded by Barry Sherman who built it into a world class development organization. Bill Young had a major role in development and built our factories so we were prepared once research again became productive. Then we got new products approved, like gamma [interferon], DNase, HER2, and Rituxan--the latter two approved and marketed after I left. Almost all the other products in clinical trials today were

discovered or licensed during this third generation. Art Levinson took over research, and did an extraordinary job with that, then he took over development too. What we did was expanded our horizons, and move from being an integrated biotech/pharmaceutical company into being truly a significant corporation. With a significant number of employees. When you have three or four thousand employees you are managing by systems and philosophies rather than by talking one on one. You have to think of it more as an intellectual exercise than as personal. You have to be more thoughtful and analytical, and less instinctive. Although I must say that I believed, and still do, that instincts are very important and I continue to use mine.

FDA and Healthcare Reform

Raab: We grew in our role in industry matters. FDA reform, like the implementation of PDUFA [the 1992 Prescription Drug Users Fee Act]. It brought a lot more people into the FDA, particularly in biologics, and put commitments and systems into place in the FDA to speed up the timetable for approvals. I had a major role in the FDA reforms through the industry organizations. That was very important to the biotechnology industry, as was President Clinton's healthcare reform efforts.

I have only been truly active in one presidential campaign, and that was in supporting him in his first campaign. I thought it was in Genentech's best interest for me to become involved in the campaign. I went to the economic summit which Clinton convened in Little Rock after he was elected. I was even on the MacNeil-Lehrer Hour during the budget reconciliation in the summer of 1994, which was fun. But then Clinton's healthcare reform was announced. We worked very hard behind the scenes to prevent from happening what did happen. It was clearly a disaster. I had a meeting one-on-one with Hillary Clinton. I had sat next to her at dinner at the economic summit in Little Rock, so I had gotten to know her some before that. I said I just couldn't conceive of where they were going on healthcare reform. They were excluding industry, the medical profession, the nursing profession, hospital management, payers from developing healthcare reform. There was not a single person on her eight-hundred person task force who was not a government employee. Many of them even refused to talk to people in the private sector. And it's a shame. I supported them because I thought they had the intellectual capacity, and the dynamics, to lead this country. There was opportunity to do some healthcare reform, and they just absolutely blew it. It was the beginning of the end of my support for them. It was gigantically disappointing. They had the power to make a difference and in the end they didn't. There was tons of other legislation and regulation that affected Genentech--like tax laws--but what really counted was FDA reform and healthcare reform.

Running a Big Company

Raab: So my era was about preparing the company to be a big company. It's not a big company like Pfizer or Roche, but it has billions in sales, and thousands of employees and numerous sites. Running a company of five thousand or fifty thousand employees isn't all that different. Abbott had close to thirty thousand employees when I was president. Running a company of five thousand people versus five hundred people is incredibly different.

The other part of the Raab era was the second Roche deal which was, as mentioned earlier in these interviews, the last thing I did at Genentech. I negotiated that almost exclusively myself. Fred Frank was involved at the end, and there were some lawyers and bankers. But it was fundamentally done between me and Fritz Gerber, the chairman of Roche. It was one of my proudest accomplishments and it benefited our shareholders and Genentech continues to be an independent company. It has its own personality and culture. The science is extraordinary and sales are a machine. It would be useful to interview Barry Sherman and Jim McLaughlin.

Fourth Generation

Raab: Then Art took over; it is now the fourth generation. Art and I are as different as night and day. He's a brilliant scientist. Soft-spoken. To a certain degree cautious. He is much less involved in industry matters. Genentech has resigned from PhRMA. He doesn't serve on the board of the California Healthcare Institute or BIO. And that's fine. He has very profound knowledge of medicine and science. He has a good rapport with people. He's the most sincere, honest person I have ever met. It was a privilege to have had a role in moving him up.

He's created a new management team. There is nobody left there who reported directly to me. Which is also fine. They've all moved on to do great things. He just recently brought in a new head of research, Richard Scheller. The woman who is now head of development, Susan Desmond-Hellmann, was there when I was, in a senior clinical role, but he moved her up into having all of product development. He brought in a chief operating officer, Myrtle Potter, who is responsible for all commercial activities. The vice president of sales, Kim Popovits, was a standout. She used to embarrass me by reminding me that her father and I had gone to college together at Colgate. [laughs] She was head of the sales force for about twelve years. She just recently left.

Bugos: What sort of business and management issues have characterized the Levinson half-decade?

Raab: Well, from a sales and marketing perspective, they are less aggressive. Cautious. They might say more ethical. That doesn't mean that when they are going into see an oncologist about HER2 that they are not aggressively promoting the benefits of the drug for women who have breast cancer. But, I think, they are more careful. The new products have needed less aggression because there is less competition. The two key products that have been introduced to the market--the two anticancer monoclonal antibodies--are incredibly effective drugs and they have no competition. It started with DNase/Pulmozyme for cystic fibrosis. As a sale it's more of an ethical, clinical, physician-support kind of sale. Growth hormone we had to sell against Lilly and Serano Laboratories and BTG [Bio-Technology General Corporation], and with tPA against SmithKline Beecham and streptokinase. We had to prove our drugs were better on a comparative basis--particular as the competition was much cheaper.

Then there are relationships with other biotech companies. There are no relationships with other big pharmaceutical companies, other than Roche. But Genentech had always had aggressive in-licensing and co-development of drugs. That continues to be an important part of the company. Now, they probably have relations with twenty or forty different companies. Though we also had a vast number of relationships. Clearly Art should be interviewed.

Integration for Independence

Bugos: One thing I think is important in this story is that the biotech industry, like Genentech, is independent. Biotechnology isn't just a research tool in the laboratories of big pharma. When Swanson and Boyer and Perkins were sitting down making plans twenty five years ago they could have kept the research in academia and simply licensed it to big pharma for royalties. Genentech integrated its operations which enabled continued independence. Levinson now is keeping the pipeline full to keep that whole infrastructure full. Even apart from the debate around the Roche acquisition, was independence something you debated as you kept moving the company along in its progression?

Raab: Sure. Not so much debated as discussed. Genentech's independence is a curiosity since Roche has owned between fifty and a hundred percent of it since 1990.

The reasons are the people. And it emanates from the science. Let me just say that I don't understand how you run a research organization with four thousand Ph.D.s. Genentech's much bigger than when I was there, but still small on a relative scale.

Individuals discover things. Individuals do clinical trials. Individuals convince doctors to use a drug. What you want to do is have individuals motivated to do those things at an extraordinary level of excellence. There is benefit in this regard to smallness, where a culture of excellence is maintained. It can be a tough culture, where you do not tolerate people who are not motivated by excellence in performance. Risk taking can be part of that culture as well. Risk is fundamental to great science.

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Raab: Entrepreneurship is a wonderful word. Keeping that sense of ownership, so that people sincerely feel like owners rather than employees. We talked about that at all times at Genentech. The bigger it got the more we talked about making people feel and think like owners. That's why I believe passionately in stock options for all employees. When you spend money you're spending *your* money. I think that makes a big difference. And it's part of the whole high tech milieu around us in Silicon Valley, and the two drivers of it were Hewlett Packard and Genentech. The HP Way was something we looked at very carefully. Genentech was of the same culture.

Ho-Hos: A Continuing Tradition

Raab: The Friday afternoon beer parties are still going on. What's significant about that? It's not the drinking of the beer. It's significant that it has never been stopped. Lots of companies have done that over the years. But they did it when they had thirty or forty people and stopped when they had five hundred. And we continued it when we had thousands of people. Let me tell you...not an easy task. [laughs] Our Ho-Ho's were something the senior management worked on regularly. We made sure they were fun and we stylized them. You couldn't believe the Holiday Ho-Ho's. We'd have eight hundred, a thousand kids. We had Santa Clauses. The last one I went to we had eight Santa Clauses, lines were still an hour, and we had to arrange it so that the

kids couldn't see that there were eight Santa Clauses. We worked on how you did the Santas. We took that seriously.

And the worries you have about safety. We put in a system where we had taxi cabs from the local South San Francisco cab company sitting outside on Friday, early evenings, near where we had the Ho-Ho's. Now they have a building that is essentially just for Ho-Ho's. When we first did it, people didn't want to use the cabs because Saturday morning they didn't have their car. So we'd pay for them to take back the taxi on Saturday morning to get their car. Then we put in a system of employee vigilante committees to look for people who were drinking too much beer. For that reason we always had lots of food too. For all the young employees Friday night dinner was at the Ho-Ho's. [laughs] They would chow down. You had to get there fast. We never had an incident, never had an accident.

We put themes into them. February was Black History Month so African-American employees did one of the Ho-Ho's. Cinco de Mayo. Swanson and I always did a Hawaiian Ho-Ho. Everybody wore Hawaiian shirts that day, and would get leis, and Bob and I would do hula dances. The fermentation guys led a Ho-Ho where anybody could bring in their homemade beer, and we'd bring in beer judges. That was the culture that personified California, and high tech, and Genentech.

Spin-offs

Bugos: On the issue of entrepreneurship and independence, did you have a policy of encouraging or discouraging employees who wanted to spin off into new companies?

Raab: We did not encourage that. When somebody had something that we wanted, never was there a spin-off. The spin-offs that did happen were things we didn't want to pursue ourselves. GenVec was oriented toward gene therapy. We decided we did not want to pursue gene therapy. But there was a lot of interest in cystic fibrosis--from the Cystic Fibrosis Foundation and some important physician-scientists, like Ron Crystal who was at the NIH and is at Cornell Medical Center today--to develop gene therapy for cystic fibrosis. We had some technology and some scientists who were interested in it, but we decided that was not a business area we wanted to pursue. So we helped in the creation of GenVec, about 1994, which I think is doing entirely different things today. Financially, we owned stock in it, put money in. We let certain employees go there, and we had people on their board.

With the AIDS vaccine, the same thing. Bill Young [William D. Young, chairman and CEO of ViroLogic, Inc.] is now involved with VaxGen as an investor and chairman as are three or four Genentech scientists and physicians. There was actually a television movie about one of our scientists [Donald P. Francis, former head of the AIDS laboratory of the Centers for Disease Control, based on the book *And the Band Played On* by Randy Shilts], who just believed so strongly in our vaccine. We put a lot of money and time into AIDS research and had come up dry. A decade before we had decided we were not going to be in the vaccine business to begin with, any vaccines, so we licensed out our vaccine technology to SmithKline Beecham and a number of others, like Pasteur [Mérieux Connaught]. The AIDS vaccine was such that we didn't want to kill it but we didn't want to develop it. So we stimulated the spin-out of this company, VaxGen, which was completed just after I left. It is doing clinical trials in Thailand and

elsewhere on the AIDS vaccine that came out of Genentech [VAXGEN]. Intellectual property, people, money--all created that.

Tularik, Inc.

Raab: Tularik was not a Genentech spin-out *per se*. Tularik was created by Dave Goeddel, who is the CEO of Tularik and had been one of the first ten scientists at Genentech. He and two scientists--one from Berkeley and one from the University of Texas--had this idea. They had fished together on the Tularik River in Alaska. Bonefishing was a big thing at Genentech, especially with the scientific guys. They would go fishing to Christmas Island and Alaska and places around the world. Herb Boyer is a passionate fisherman and led that pack, and Tom Kiley was too. I gather on one of these fishing trips, the idea of the science behind Tularik was shaped.

Goeddel was very close to Levinson, who was head of research at the time. He presented this to us. We did not want Goeddel to leave at that stage. So we worked out a system where we invested in Tularik, and convinced Goeddel that he would get options in it and work one day a week there, which was in South San Francisco. For two or three years he had his feet in both doors until he finally left and went full time at Tularik, maybe in 1994. Tularik was the kind of thing that worried us--that we would lose people to that kind of opportunity. That our best scientists would see that they could make a lot of money by getting founders' shares, which obviously was no longer the case at Genentech. When you have a valuation of twenty billion dollars, the probability of your stock increasing tenfold in two years isn't very high.

GenenEx

Raab: We used to sponsor an organization, GenenEx, of ex-Genentech employees. We would let them meet at the company. I would speak to them. They were all shareholders. Brian Cunningham, the ex-general counsel, set up a directory of GenenEx's in case they wanted to find each other. We helped people find jobs if they needed it. We tried to be as nice as possible to people who left. You never make money with your enemies. The industry is populated with ex-Genentech people. People with master's degrees who went back to get Ph.D.s then ended up somewhere else. Or people who just left for a smaller start-up. We never fought that, but we hated to see people go.

Sabbatical

Raab: We had a sabbatical system at Genentech. In your seventh year you got six weeks in addition to your vacation. Vacation at Genentech was three weeks for everybody, starting their first year. Symbolic of Genentech, in treating people equally. So you could in your seventh year take your six week sabbatical, plus three weeks vacation gave you nine weeks, and you could pull in three weeks vacation from the year before and after. So you could get three months off. We always lost a lot of people from that. [laughter] They'd come back from their sabbatical and decide

they'll just move on. Unfortunately, the most senior guys didn't take them. My sabbatical I took the summer of 1992. I took four weeks, which was a giant time off. I'm a firm believer in vacations. I always took my vacations, and believe people should at all levels. The company goes on. The sabbaticals are a special part of the Genentech culture.

Genentech's Second Generation

Raab: And day care. The day care center was not a minor activity. It was a tough decision. Very expensive. I think when we set it up it cost us a million dollars. Right before the Roche deal. Bob was still CEO when we did it, and Bob and his wife were the driving force behind it. Bob gets credit for doing it, and I'll take some credit for doing it well. It's very important, obviously, to the parents who have kids at the center. The quality of care is extraordinary. I decided we were *not* going to have any problems. So we just did it Rolls-Royce. I had my little twins in there periodically. It's not cheap, but if you can't afford it we had scholarships for employees who made less money. And we subsidized it by millions. The goal was quality, not cheap. Everybody in the Bay Area knows about it, and people at Genentech take real pride in their company doing it. It really worked in that respect. If you were recruiting somebody who had young kids, it helped you recruit these people and keep them. I remember one women came to me with a tremendous job opportunity. She came to me as CEO to ask if she could keep her kid in the day care when she left, but I said no way. [laughs] We did allow for a three month transition until they found an alternative. The guys I would talk to from big pharma thought I was nuts to have that day care and to expand it. That was their problem.

Serving on Boards

Bugos: Were the other companies you were involved with while at Genentech spin-offs?

Raab: None of those three companies whose boards I served on ever had any tie to Genentech. While I was at Genentech I was on the boards of three biotech companies in the Bay area--Shaman Pharmaceuticals, Oclassen Pharmaceuticals, and Cholestech. None of which I am involved with today. Two I remained involved with after I left Genentech. In all three cases I was on those boards because the founders were personal friends. Glenn Oclassen--I helped him sell his company after I left and he's a wealthy guy now. The Kirk Raab Chair in Biology at Colgate was established from the sale of my stock in Oclassen Pharmaceuticals. The lady who had founded Cholestech left, while I was still at Genentech. I was only involved with that company for two years. Cholestech is over in Fremont, on the NASDAQ, and it goes up and down but I haven't had any contact with it for years. Shaman was the first one I did. That was very exciting. The founder, Lisa Conte, was a friend. It developed drugs found by shamans in the jungles and rainforests of Africa and Asia and Latin America. I had lived in Latin America, and she was great, and I liked the idea of it. It didn't pan out and the company doesn't exist today.

I encouraged our senior executives to be on at least one outside board, and at least one non-profit. At various times I was on the board of the San Francisco Ballet, the San Francisco Symphony, KQED public radio and television. With Planned Parenthood I was very involved in the merger that created Golden Gate Planned Parenthood. The Contra Costa, Marin, San Mateo,

and San Francisco Planned Parenthoods were all merged and I helped bring in a CEO. I ran a capital campaign for them, which was really hard.

Bugos: Why did you encourage your executives to serve on outside boards?

Raab: Various reasons. It's kind of fun. It gives you exposure to other ways of doing things. Keeps you in contact with small companies. Lets people feel more important, because they are important people. It helps with community involvement. We also had donation programs. The human resources department would figure out which Genentech employees had how many kids in the local schools and then would donate to the schools on that basis, or to the hospitals, or the symphony or ballet. Not tons of money, but we played a role.

Uninsured Patients Program

Bugos: About 1987 you announced that Genentech would make human growth hormone available to any child who couldn't afford it. What was the impetus behind that? Did you have any models?

Raab: No. But we did a lot of that sort of stuff. When we started with growth hormone, if people couldn't afford the co-pay we would forgive the co-pay. Which, interestingly enough, turned out to be illegal. [laughs] If somebody couldn't afford human growth hormone we would supply it to them. Then we did the same thing with tPA. It made a lot of people feel good about us. Physicians, for example, who had a patient who couldn't afford it could still treat the patient. The Growth Hormone Foundation of America thought that was pretty nice of us, and it was.

Genentech Foundation

Raab: Then we created the Genentech Foundation, and put some of our fundamental patents into the foundation. Herb was chairman of the board of that foundation, which financed certain research projects in academia. Projects which were not related to Genentech, but which scientists generally thought were good for mankind. The foundation also licensed other companies on our early, fundamental, broad patents. Other companies took licenses, small licenses like half a percent or one percent max. It gave strength to these licenses. Some companies sued us over these patents, and the fact that so many other companies had taken out these licenses gave us some strength.

Patent Litigation as Distraction

Bugos: Did you find yourself in the late 1980s spending more time protecting your intellectual property?

Raab: There was and continues to be tremendous amounts of litigation. It didn't take a lot of my personal time. It was not a significant distraction for me, but it could be at times for certain scientists. Depositions, discoveries. We worried about the amount of time it took Goeddel, for

example, and some others. And it cost us a lot of money. We spent a tremendous amount of money on the tPA litigation with Burroughs Wellcome, first in the UK and then in the United States. And then even more in our litigation with Lilly and with the University of California San Francisco. Eventually settled both--Lilly in my time. I can't remember what they paid us but it was much more than a hundred and fifty million dollars. Then after I left Art settled with the University of California San Francisco. In that case, Genentech paid them a significant amount of money. As I said before, new CEOs often settle.

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Raab: Most recently Genentech has suffered a loss in the City of Hope case. I hope it is reversed in appeal. There was a lot of litigation with a lot of companies over the years. But I've always felt that there is no reason to spend the money having patents if you're not going to protect them. Net, I think we did pretty well in protecting ourselves. But if I thought it was too serious a distraction, we wouldn't have done it.

Bugos: And economically it made sense, in that your royalty income exceeded your litigation expenses?

Raab: Oh, we had major royalty income--from Lilly on insulin, and Roche and Schering on alpha interferon, from Baxter and Bayer on factor VIII, on bovine growth hormone with Monsanto, and many many others.

Animal Health

Raab: By the way, I had nothing to do with the bovine growth hormone negotiations with Monsanto. When the relationship needed changing a bit I got a little bit involved. The Ciba-Geigy animal health deal, I helped finish it off but Tom Kiley took the lead in that.

Joint Ventures

Raab: When I came to Genentech we had a joint venture in diagnostics with Baxter in Boston. HP Genenchem was at Genentech and did instruments. We had a joint venture in animal vaccines in Texas. Genencor was a joint venture in developing industrial enzymes. Vitamin C--industrial fermentation using recombinant DNA technology--with Eastman Kodak and Lubrizol. When I came I decided it was a mistake for us to be so diluted. These were all businesses with entirely different margins, and entirely different businesses from the pharmaceutical business. We should be a pharmaceutical company. We just decided to sell off over time our interest in those companies, and we were out of most of them by 1988 or 1989.

Focus on Pharmaceuticals

Bugos: Other companies, like Cetus and Biogen, expected industrial biotechnology to be much bigger than pharmaceuticals.

Raab: Cetus was older than Genentech and was kind of a fermentation technology company and then they saw recombinant DNA as the newest technology in fermentation technology with industrial applications. The margins, the shareholder value you can bring from pharmaceuticals is much larger than what you can get from an industrial enzyme, or a soap, or a diagnostic, or instrument, or animal health. When you sell a medicine for an animal, with the exception of small animals, pets, the decision is an economic decision. It is not a healthcare decision. The farmer decides based on whether that cow is worth that medicine. Or should he just slaughter the cow? Whereas with humans it is not a fundamentally economic decision. Does the person need the medicine to get better? If yes, then the person will get the medicine regardless of the cost. Unfortunately, we do have healthcare rationing in our society. There is discrimination against poor people in this country, and that is in effect rationing. But our decision was purely based on shareholder value and how we could build our company the fastest. These joint ventures were diluting and distracting.

Moving Away from Vaccines

Bugos: What about moving away from vaccines?

Raab: That was a much harder decision. I supported it in the end, but it was a position taken more by our sales and marketing people--like Jim Gower--who felt that the vaccine business was more of a commodity business. I felt, particularly with the hepatitis vaccine, which has proven to be the case, that there were big opportunities. But I didn't feel strongly enough that I went to battle over that. The problem with vaccines is the clinical trials. They often have to have tremendously large populations of patients. They take a long time because you have to confirm that the patient does not contract the disease. Not just a month or two after they get the vaccine; you have to follow the patient for years. There was another problem with the AIDS vaccine, which is what we were working on. I have no doubt that Genentech's AIDS vaccine works on sixty percent of the patients, maybe fifty percent, maybe seventy five. But that may kill more people than save their lives. If somebody took it and then decided to be promiscuous--somebody who had decided not to be promiscuous before the vaccine and so did not expose themselves to being infected by HIV, if that person was in the forty percent range where the vaccine is not effective [he might become infected]. And, there was no way to find out if you were in that forty percent range or that sixty percent range until you either contracted HIV or not. Same thing with hepatitis. The cost of developing a vaccine is very expensive and complicated. What is the legitimate percent of efficacy? It was just awfully complicated. We thought we'd get a better return putting resources into drugs rather than vaccines.

Monoclonal Antibodies

Bugos: What about monoclonal antibodies? What played into your decision to re-enter research on that platform?

Raab: Just a simple research decision-making process. The monoclonal antibodies initially that failed--from other companies, not from Genentech--were anticancer drugs. They were kind of like gamma interferon in the early years of biotechnology. Everybody looked at them as silver bullets. The word "interferon" came from a Flash Gordon comic strip. [laughs] Today we know there are no such things as silver bullets. The one for HER2/neu was the first one to which we committed, and the one for anti-IgE was the second, with Rituxan being the third. We saw and understood specific targets. That's what happened with monoclonals. You don't develop a monoclonal without a profound biological knowledge of the target you are going at and why that monoclonal antibody will get to this target and stop it.

HER2

Raab: When we understood the oncogene HER2/neu, and believed we could develop a monoclonal antibody that could inhibit the growth of tumors that resulted in women who were expressing significant quantities of HER2/neu, we decided to pursue it. In the case of HER2/neu some scientists were especially influential with me.

There's a book on HER2/neu. In my opinion, it's a crappy book, though there is some good stuff in it.[2] It talks about a professor at UCLA, [Dennis J.] Slamon is his name, and a woman who's husband was a big NBC producer who died of cancer--Brandon Tartikoff. She raised a lot of money from the Revlon Foundation and did a lot of things in breast cancer. This book makes Genentech look like we did nothing and they did everything. That was not the case at all. But I got to know Slamon and he did help convince me this was where we should go and clearly he made a great contribution.

There was a lot of reservations early on in Genentech, including from Art Levinson and Barry [M.] Sherman who was head of clinical research then [as chief medical officer]. That's one of the few products I pushed on my own. Generally I didn't do that. The godfather within the company was a guy named [H. Michael] Shepard. Paula Jardieu became the godmother of all monoclonal antibodies at Genentech. She was a very smart, capable, really hardworking scientist. With clinical data everyone joined in and it's now a wonderful success with more to come.

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[2] Robert Bazell, *Her-2: The Making of Herceptin, A Revolutionary Treatment for Breast Cancer* (Random House, 1998).

Reviewing Drug Candidates

Bugos: So was there a general protocol for deciding on new drug candidates?

Raab: There was a committee but, as I said earlier, there was a democracy at Genentech with only one person having a vote. [laughs] I'd say that at the senior managers' meetings and some would hate it and some would think it was funny. I'd say: "Okay, let's have the vote." I'd shoot up my hand. "Yes. Okay. It's carried." [laughs] First you had your research. Research, I clearly believed, businessmen like me should stay out of their way. You have to deal with facilities, which are very important in research. You can't do research without the right labs and equipment and they cost a lot of money. And you have to deal with culture and keeping the people. But executives should keep their hands off.

Postdoctoral Scientists

Raab: By the way, I was very involved with the postdoc program. There's probably a hundred fifty postdocs at Genentech today. Genentech's postdoc program, and allowing publishing, are one of the secrets of its success. I was very involved in making sure we kept those cultural things because there were lots of forces saying don't bring in postdocs because they all leave and go to help other people. But you keep good scientists when they can have postdocs themselves. Some postdocs do a lot of great work when they are there. And a few of them stay. We had a rule, like universities do, that never more than five percent of them were allowed to stay.

Research Independence

Raab: Research began reporting to me about 1988, about six months before [David] Martin left. Obviously, I decided to change the organization, then I left the research organization alone, except for having the head of research meet with me weekly. He would *inform* me regularly about whatever he thought I should know about what was going on. And I'd meet with top scientists individually too. I learned this at Abbott. I built a trust. He knew that I wasn't going to screw around with him. I just wanted to hear his thought process. The intellectual systems he was going through to make sure it had good sense. That the road they were going down was logical. I didn't judge the science. I wasn't capable of that. I wasn't interested in judging it. Of course, I helped him with organization and human resources issues, and helped him manage his budget.

Science Off-site

Raab: Then once a year, sometime twice a year, I put together a meeting where we all had a shot at research. It was generally a two day meeting off site. Ten research people--scientists or group leaders--would come to the management team, the marketing guys, finance, the top twelve

executives in the company. They presented what they were doing. We had the right, and everybody knew we had the right, to ask questions. No matter how dumb, no matter how many, we could ask anything we wanted to, and say anything we didn't like about it. Just an open field day. There was only one rule. There would never be any decision made at that meeting. I'd say to research: "You're going to hear us. You can walk away, walk into the parking lot and laugh your heads off. That's fine if that's the response you had. You can take one thing you heard and say, 'Ooh, we hadn't thought about that!' You guys are the scientists, the geniuses." And I never followed up to see if they had taken any of those ideas. As time went on Art would tell me, though I never asked him, never kept score. It gave the scientists this tremendous sense of independence which, as long as you have an outstanding head of research, as we eventually did with Art, is the way it should be.

At Genentech in those days the goal was that any scientist would spend thirty five percent of his or her own time on his or her own research, doing things that had nothing to do with the goals of the company. We owned the results of it but they could do anything they wanted to. That kind of freedom, except for Bell Labs, was unheard of in industry.

Commitment to Development

Raab: Development was entirely different. Development is pure business. Development starts when you decide to begin spending money on animal work that is not experimental, but is to enable you to go into human clinical testing. At that time you also begin the scale up of the manufacturing process to have enough of the active ingredient, the active ingredients, the protein, that is pure enough that you can put it into human clinical trials.

Development is more of a process. There was a development committee. It was chaired by various people over the years. They made a decision that the compound was good enough that we were going to submit it to the FDA and have it on the market. Then there were product team leaders who were assigned to the product from various disciplines in the company. Half of their job was just to manage that product. They had no line responsibility. They had horizontal responsibilities.

There was a committee who reviewed the product and then made a recommendation to the management committee, who were my direct reports, and a few other people. Then we evaluated it at great depths and lengths. For that we'd do Gantt charts, costing, sales forecasts, et cetera. There were always consultants involved. The committee made the decision. I never overturned a committee decision, though like with HER2/neu I would be much more aggressive in influencing plans on certain projects. I don't think I ever would have done one if they said: "No." But for something like HER2/neu, there were a bunch of them who wouldn't have done it. But we did.

Something we did, uniquely at Genentech, was look at what would a phase III trial three years from now look like. It was a good test. If at the beginning of development they couldn't design a test at the end, then there was something wrong. If you couldn't say: "We're going to have to do two thousand patients and these are the end points," even if it wouldn't happen for years, then you probably shouldn't do it. At least I had to know that they had gone through that process of conceiving what the ultimate drug would look like and the road to get there. This all sounds quite obvious, but it is amazing how many times it is not done.

Hundred Million Dollar Market

Bugos: How much did the market analysis drive that decision? Did how much you expected to sell drive the budget you would set for getting approval?

Raab: We would never have done a drug where we didn't think we could sell a hundred million dollars worth in the United States. We would never have begun if we couldn't sell a hundred million dollars. That must be up to three or four hundred million, today, at Genentech. At big pharma it must be up to a billion dollars. So the market analysis was very fundamental. But not at my level, because it never would have gotten to me without it. DNase/Pulmozyme was borderline but there we had worldwide rights, and with that we thought we could sell a couple hundred million dollars worth.

Product Development Teams

Bugos: And how did you set up these product development teams? Did a research scientist come to you and say lets set up a committee to move this thing forward?

Raab: A research scientist stood up and said: "I want my product to go into development." The head of research endorsed that. He was on the product development committee. Within research, the scientist was the product team leader. He or she would bring it to the senior product development committee, and staff people dedicated to new market analysis would help them prepare information on market size and manufacturing and stuff like that. They would become the market godfather. Everyone understood how it would work. Sometimes very complicated and controversial and sometimes very easy. Generally, human beings tend to make things harder rather than easier [laughs].

I changed the product development committee every eighteen months or so. I'd find that it was getting a little bureaucratic. They had minutes of their meetings, and if they were twenty pages rather than two pages I realized their meetings were going five hours rather than two hours so I knew it was time for a change. That was also true for the product development team leaders. Some would stay with the product for years. Nobody ever stayed from beginning to end, with the exception of Pulmozyme.

Many of those team leaders today have gone on to bigger things. Millennium Pharmaceuticals in Boston is a big biotech company. Mark Levin, when he left us, was team leader on Relaxin and gamma interferon. He put the first money into Tularik, then did Millennium, then left to be CEO of Millennium. The house Mark bought in Newport, Rhode Island--I heard he paid sixty million dollars for the house so he was a product team leader made good. [laughs]

Bugos: And was this product development team approach standard throughout the biotech industry?

Raab: Yes. The vast majority of people who did it throughout the industry worked at Genentech at one time. Companies would try to get Genentech people to teach them. A year or two after they started up they would try to hire Genentech people to teach them how we did it.

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Bugos: Okay. I also want to ask about the financial analysts who followed the industry and whom you think produced reports that would stand the test of time.

Raab: It's been interesting to watch the evolution of the analysts of the biotech industry. They mostly continue to be from a scientific background rather than from marketing or business backgrounds. Analysts from the early years, from the early 1980s, none are still around, except for Peter Drake. Tina Lerner was at Lehman Brothers. I recently learned she is retired now. She went into money management at Pequot, a big hedge fund. Peter [F.] Drake was at Kidder, Peabody in those days, and eventually created an investment bank with some other guys that specialized in healthcare. Which they subsequently sold to Prudential. David [H.] MacCallum was at Hambrecht & Quist and eventually became a banker, and I assume he still is. Linda [I.] Miller at Paine Webber was sensational, and became a money manager in Boston.

Then there was Denise Gilbert at Montgomery Securities. She was the best. She always seemed to call our stock right. She went to an English bank that doesn't exist anymore. Then she was at Affymax as chief financial officer, then at InCyte Pharmaceuticals as CFO. The last time I saw her she was about to ride her bicycle around the world.

They were very important to us. We were raising money all the time. The Chinese wall between research at investment banks and the bankers was very real. The analysts didn't know what the bankers were doing. When they evaluated a company they were as objective as they could humanly be. Today analysts have a big role in the new investment activities of the banks. The system, if not the individuals, are often prostituted today because the banking business got so big. We saw that in the high-tech industry as these analysts continued to put out "buy" recommendations as stocks fell. That couldn't have happened in those days.

As time went on--and their background was basically that of a scientist and figuring out whether a drug was going to work--they were less effective at forecasting sales and profitability. When the companies got into selling product, that was often when the analysts started making mistakes. They tended to be too bullish. And there is no greater crime than when an analyst forecasts your sales a certain way and then you don't meet those estimates. They punish you very badly.

Bugos: Thank you.

Life After Genentech

[Interview 4: March 8, 2002] ##

Bugos: Perhaps we could start this fourth interview as we did the first, with your experiences outside of Genentech. Specifically, how your experiences at Genentech shaped the work you did with companies after you left. There is a list of about fourteen companies you've been involved with since 1995.

Raab: When I left Genentech in July 1995 I was full of energy and the desire to be productive, but it was not a very happy time in my life. I was really wondering what I was going to do. I was quite melancholy. We went to North Carolina, where we often went to spend vacations on the beach. We went for a month in August and early September of 1995. On September 5, I got up early and went for a walk on the beach and watched the sun rise. I suddenly realized that I needed to get out of my doom and gloom and get going. I've had this wonderful life, this phenomenal career, and am economically very secure. Why in the world was I beating myself up? And I really felt great. That morning I went back to the house and had breakfast and went out to play golf with one of my nephews and a friend of his and shot my first hole-in-one. I thought that was a great omen. [laughs] The stars had lined up again.

Exploring Venture Capital

Raab: It was clear to me that I did not want to run a company again. I did not want to be a CEO. I felt I should use my vast experience in big pharma, Genentech, industry matters and Washington to help other CEOs build their companies. I thought about venture capital and talked with my venture capital friends. But I also didn't want to be confined in what I did. I believed I could create a situation to be a freer agent than I could if I was with one of the classical venture capital firms. I looked into starting my own venture capital fund. Spent some time with Sandy Robertson at Robertson Stephens. I spent some time with Alex Zaffaroni who had started many companies including Syntex, DNAX and Alza and whom I had known for years. I believed I was going down that road.

Professional Director

Raab: Then Lisa Conte, the CEO of Shaman, suggested that I become chairman of Shaman. I was already on her board. This would be in the manner that Roy Vagelos, who had just retired as CEO and chairman of Merck, had done at the beginning of that year with a company called Regeneron Pharmaceuticals, a biotech company in Tarrytown, New York. I really liked the idea of helping her build her company and advising her. So I decided to do that and the Shaman board gave me significant stock options, an office, a secretary, and some pay. There was a press release on this move that resulted in significant publicity again about me--the *Wall Street Journal*, the *New York Times*, the *San Francisco Chronicle*. In the process of an interview with the *Wall Street Journal* I kind of decided that this was the road I would go down.[3] That quickly blossomed into two other relationships--the two most important ones that I'm still involved with today.

Connetics Corporation

Raab: One was then called Connective Therapeutics, which is now Connetics in Palo Alto. At that time the company was based on two products that they had licensed from Genentech. In fact, I had negotiated the final deal on the part of Genentech. I often wished that somebody not as tough as me had negotiated it. [laughs] One was Relaxin, one was interferon gamma, and interestingly neither of those products are actively part of Connetics today. We did a spin into Intermune with gamma, and Relaxin simply hasn't been successful in clinical research. But Connetics is now a very successful dermatology company and growing in value and sales dramatically. We had a very successful IPO not long after I joined and that was a new experience for me, although we had done a lot of equity offerings at Genentech. I'm very involved and have been chairman since late 1995. Connetics has an extraordinary management team with three GenenEx's and one Colgate graduate. But most importantly, Tom Wiggins, the CEO. He is terrific and we are real partners.

I left Shaman, because Shaman didn't make it. Their lead drug failed in clinical trials, failed more with the FDA than with the trials. They ran out of money. The company has fundamentally disappeared. I moved my office to Connetics and they now pay for my secretary and I have a wonderful relationship with the company and am well-rewarded by them.

Oxford Glycosciences, Ltd.

Raab: The other company was Oxford Glycosciences (OGS). I've been very involved in Oxford. It's outside of Oxford, England. It was the first biotech company to spin out technology from Oxford University and the university has an equity position in it. I became chairman of that company in October 1995, soon after Shaman in September of 1995 and right before Connetics. I also changed the name of this company. I got rid of the CEO there, brought in a new CEO,

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[3] Don Clark, "Raab Is Named Chairman of Shaman, Two Months After Genentech Ouster," *Wall Street Journal* (14 September 1995) B10.

Michael Kranda, an American, who had been president of Immunex Corporation in Seattle. We recently announced that he was going to be leaving the company and I have hired an outstanding successor, David Ebsworth, who was president of the worldwide pharmaceuticals group for Bayer AG. Michael did an excellent job. OGS was an instrument company based on glycobiology and we changed it to create proteomics. Unfortunately, we just had a product rejected by the FDA. But OGS has a lot of other drugs in the pipeline. It has relationships with Medarex and other companies developing small molecules and monoclonal antibodies and we have two hundred million pounds in cash. I go to England about every six weeks to spend a week working with them and running the board meetings. I look foroward to working with David. I'm about to become a member of the Chancellor's Court and am honorary fellow at Exeter College at Oxford University.

Other Directorships

Raab: So those are the three things that I did aggressively in the very beginning. I try not just to join boards, though I was not completely successful at that. The boards I joined earlier were where I tended to know people and joined mostly as a favor. I joined the board of a company in Santa Clara, Applied Imaging, which is a diagnostic company. I brought in a new CEO, moved the founder out, and that company has done reasonably well. A small company.

I joined the board of Bridge Medical in San Diego. That's a company that has ended up being a software company. It supplies PCs [personal computers] with software and readers to check medicines before they are administered at bedside in hospitals. There are a lot of errors. It was a secret of hospital care that fifteen percent of medicines are giving mistakenly. There was an Institute of Medicine research project that made that publicly known, though hospitals have known it for years. This is a way to check, with bar-coding, that patients are being given the right medicine at the right doses at the right time. Then the system puts all that data into a laptop that is at the bedside too. That's a very exciting company.

I was also chairman of the board of another private company in San Diego, named Accumetrics, that was also in diagnostics. Kleiner Perkins, the big venture firm that had founded Genentech, asked me to get involved. That's common--for the investors to ask me to get involved. With Connetics it was also Kleiner Perkins that asked me to get involved. With OGS it was SR1, the SmithKline venture group and an English venture group that asked me to get involved. We sold Accumetrics to a Danish diagnostic company.

I am a board member of a software company, Velos, in Fremont. I got involved as a favor to Fred Frank, the banker with Lehman Brothers whom I mentioned earlier in these interviews. Velos does software for managing research and clinical trials over the internet. All the data moves from the hospitals to the data collection center to the CRO [clinical research organizers] to the companies. It's a pretty sophisticated and useful product. Whether it's going to make it or not I don't know. It's part of the whole internet and dot.com milieu.

Another board I was on is ePhysician, which has a Palm handheld device for doctors. They can write the prescription and put in information for billing when they do hospital calls or home nursing calls. All drug information is built into their Palms so they can check prescriptions as they would in the PDR [Physicians Drug Reference]. It should be incredibly successful but with the slowdown in the whole internet space and with the problems with raising money, I don't

know if they can make it. They did a very down round of financing and now the board is only the two venture capital investors and the CEO.

Another one, like Shaman, that didn't make it was LXR in Richmond. The founder was still running it when I was brought in by Bill Hambrecht, of Hambrecht & Quist. He was a significant investor in the company. He got worried about it, brought me in as chairman. We moved the founder out of management, as well as a president he had hired. I brought in a new CEO and then we found out that a lot of purported science was bogus. It was really awful. The company no longer exists. It was a public company on the American Stock Exchange. We liquidated it.

Learning from Losing

Raab: It's been a tremendous experience, with both the successes and the failures. Many years ago I had a cousin who happened to own a fighter named Ernie Terrell, who was a heavyweight fighter who had once fought Mohammed Ali. My cousin brought him down to Mexico City for this big fight, so I took a couple of weeks off and spent it with this fighter as he was completing his training. I was at ringside for this heavyweight fight, which was the only time in my life I did that. It was the in the national football stadium, the soccer stadium, built for the World Cup and the Olympics. It was the largest crowd in the history of boxing. Riding back from the hotel with this fighter after he had lost the fight and talking to him about it was fascinating. There was a famous boxing announcer, Don Dunfey, who said, "I've been doing fights for fifty years and I've never really spent anytime talking with a loser." You dream about talking to winners, but you seldom think about what it's like to talk to a loser.

I sort of had that experience with some of these companies. I hadn't had a lot of experience with the losers, though it has been part of my life since 1995 to be around these companies that fail. And I've faced a few personal failures obviously. As a company goes down, I've seen how disillusioning it is. The young people who start these companies have incredible sprit and commitment, just as Bob Swanson and Herb Boyer had with Genentech. They have just as much faith in their chance to succeed. And it's interesting to see how they fight the defeat. How long it takes them to accept defeat. A lot of them have a hard time recovering because they have put there hearts and souls into it. They invest their own money and give up what they were doing. Some people bounce right back, like Lisa Conte, who don't get down at all. She's off doing other things related to the rainforest.

What other companies were there? Veranto also doesn't exist although the business model does, as Model N. That's a software company started by Zack Rinat, an Israeli and Harvard Business School graduate. This is about his fourth company. Model N makes a tollbooth software, for a supplier and a customer. For example, you have thousands of homebuilders around the country, and a few major lumber or brick or window suppliers. These homebuilders are mostly small operations with a variety of unsophisticated computer systems. The manufacturers are giant corporations, with information technology departments. This is a software that allows the small buyers to go through this tollbooth and do all their purchasing online. It is useful in homebuilding, in the garment industry, in drugs and medical care. Model N is the horizontal company which formed various vertical companies for specific industries. Veranto was the vertical company for healthcare, to enable a small nursing facility with one laptop as well as a sophisticated medical center to interface with the drug companies or hospital

supply companies.. I joined that board. But we just couldn't generate the business to maintain it as a separate vertical company. We dissolved it and the ideas were put back into Model N. It was taking too much time to develop the revenue to support six companies, so they merged it into one company. Though I'm an investor in that company I'm no longer on the board.

Bugos: Celtor Biosystems?

Raab: I'm just an advisor to that company. I'm not on their board.

Medgenics, Inc.

Bugos: Then Sinogen International and Medgenics.

Raab: Medgenics, I'm very involved and excited about this company. I'm chairman of the board. Medgenics is legally a United States corporation but operates through its Israeli subsidiary named Biogenics.

In late 1999 I was invited to give a speech at Ben Gurion University in Be'er Sheva in October of 2000. The chairman of biochemistry at Oxford University--who's on the OGS board and one of the founders of Oxford Glycosciences--asked me to give this talk along with three Nobel Laureates at the dedication of a great big research building. I agreed to do it. By the time October 2000 came around Israel had blown up again. The Oslo Accord had fallen apart. Everybody told me not to go. I felt that if three Nobel laureates were going to speak that I should go too. Worse thing is I would give the talk, sit in a hotel, then go home. Turns out that my wife Maryann and I went, and all three Nobel laureates backed out. I gave the speech and then we did four days of touring. [laughs] Which was fabulous because there were no tourists in Israel then. We had no problems and a had a wonderful time.

On that trip I met with a whole bunch of Israeli biotech executives, entrepreneurs and venture capitalists. I met this one guy, Andy Pearlman, who is an America with a Ph.D. from Berkeley. He had gone over and started a high-tech kibbutz in the late 1970s, then started about five companies. I liked the technology and I liked him. He came over here in November of 2000. I decided to become chairman and helped him raise the A round of funding. Medgenics develops a device called Biopump, which looks like a match stick, that will use your own skin cells and viral vectors. It will become a little factory to produce proteins like human growth hormone or factor VIII for hemophiliacs or EPO for anemia or alpha interferon for people with hepatitis C. I'm in Israel about three times a year. The science and development is progressing very well and I'm helping them raise the B round right now. I also enjoy Israel, despite the terrible political situation.

Sinogen International Ltd.

Raab: Sinogen is a heartache. It's a biotech company in China, and Bill Hambrecht is also a big investor. He and the board asked me to become chairman. In fact, I named it. Before it had some long complicated Chinese name. They had a factory in Shenzhen and were producing

alpha interferon for hepatitis, which is a giant problem in China. They had plans to make hepatitis vaccines, growth hormones and a lot of other biotechnology products as they came off patent. That was a gigantic opportunity. I hired a CEO from SmithKline Beecham, Peter Wang, who was Taiwanese and had tremendous experience in mainland China. SmithKline had been the pioneering American pharmaceutical company doing business in China and he led that. We raised quite a bit of money through the Hambrecht & Quist Far East Venture Fund.

The Chinese government changed the economic organization of the country some years ago. There were hundreds of drug factories, factories making western medicines, all over China. Originally they were owned nationally, with centralized control. With the reorganization, if a factory was located in one city, then that city government suddenly owned that factory. So there were these small pharmaceutical factories all over China, and the city governments didn't know what to do with them. So we started buying them, taking a seventy to eighty percent share in them at a very low price. The city would still own part of these companies. Sinogen itself was about sixty percent owned by American institutional investors through the H&Q Far East Venture Fund, twenty percent by the University of Beijing, and twenty percent by the city of Beijing.

We had a tremendous master plan. We were going to start exporting drugs from China to southeast Asia, then to the subcontinent--India and Pakistan. Then we would begin building factories in India and work across the Middle East, then down into Africa. We were also negotiating with American biotech firms to build a GMP-certified facility [certified to the U.S. Food and Drug Administration Good Manufacturing Practices regulations] to do contract manufacturing for small biotech companies. That master plan Peter and I developed with the help of a guy named Robert Wu, who is Bill Hambrecht's son-in-law and a very bright Kellogg School graduate. Sales skyrocketed in China as we bought these companies. We had plans to list on NASDAQ with major interest on the part of JP Morgan, Goldman Sachs and Morgan Stanley. But a conflict developed between me and the Chinese directors over certain plans and practices. I decided I couldn't make the necessary changes.

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Raab: With Sinogen, I was the only non-Asian on the board, and it was clear that they didn't agree with me. I was not going to be able to be comfortable with the practices that were intrinsic to business in China so I resigned from that board. That was a real heartache because I think we could have built that company into another Genentech in the Far East. Peter left it as well, and it's hardly existent anymore.

Restarts

Bugos: Let's talk more about companies on the verge of failure. A lot of these companies went through a tough time like your experience with tPA in Genentech. Rather than throw up your hands when presented with failure you were persistent in trying to restart the company. How prevalent is trying to restart a company?

Raab: Connetics is a company where we got negative clinical results on gamma interferon, then we got negative clinical results on Relaxin. Despite that, Connetics is a very successful company today. With many biotech companies, when their original game plan or their original product does not

succeed, they have the ability to modify their direction so long as they have substantial funds in hand. In the case of Shaman, in the case of LXR, those two companies had raised so much money over the years that investors were completely disillusioned--by the companies, by the management, by the fundamental science--so it was not possible to restart them. They were both just burned out. What was thought of as a great company years ago, Synergen, had a large operation in Colorado and their big drug failed. They tried to restart and couldn't so they sold the company to Amgen. That's what happened, in a way, with Accumetrics. The technology was very good, but the market turned out to be much smaller than originally thought. Venture people were not willing to put more money into it, so we sold the company and there was a small return to investors. We couldn't restart it.

OGS was definitely a restart. It was an instrument company where we lost money with every instrument we sold. So I went in there and shut down that instrument business and focused it on drugs and proteomics. When I went to OGS the company had a valuation of less than ten million pounds. After I got rid of the CEO and before I hired Kranda--about four months after I went there--I did a fourteen million pound private round. That money was raised on just the idea of proteomics, and was done at a valuation of thirty million pounds. So we went from ten to thirty million pounds in a few months with the idea of the restart. Maybe the new leadership helped as well. [laughs] Now we are back at it, but this time I made sure that we had a lot of money in hand.

Bugos: Is it fair to say that as a board member or chairman you've been most engaged with your companies during such a restart?

Raab: Yes. But also engaged in helping them in raising money, recruiting executives, developing a strong board--not just having a few academics. I've been involved in two major IPOs--with Connetics and Oxford Glycosciences.

Bugos: Okay. The British have a term, non-executive chairman, which I understand you are now with OGS. Americans sometimes chafe at the suggestion that there can be such a thing. What does that term mean to you?

Raab: First off, I had a model in Tom Perkins. Both Tom and later Bob were non-executive chairmen. The term is being used more in America. General Motors is going to that now. With the Enron scandal, I think we may see more of that in the United States, where the CEO is not the chairman of the board, and the chairman is not just the retired CEO but a truly a non-executive chairman who has a clear oversight role. As you said, it's a very common system in the United Kingdom, and what I do at OGS, and Connetics, and Medgenics. You may get more stock or stock options than other board members. But you're not an employee. You can manage and oversee the CEO in the way that many boards only pretend to. Eight or ten people can't manage anything, especially if they're only dedicating forty hours a year to it. I try to put at least twenty percent of my time into those companies of which I am non-executive chairman.

Bugos: In that role, how much leeway do you have to look into the company and anticipate problems? Or does the CEO always present you with an agenda for advice?

Raab: I've always insisted that I have a direct line with all the senior management in the company, as well as significant scientists. Fundamentally, the line is through the CEO but when I'm at the company I regularly meet with other people. As a CEO I did the same thing. I didn't just meet with my direct reports, but spent significant time with other management people and scientists.

One of the dangers of being CEO is that you become too remote from the company, and limit your access to information.

Bugos: You said earlier in our interviews that the executive committee at Genentech barely functioned. Now that you're on the other side of the CEO to chairman relationship, do you use executive committees more often?

Raab: No, I don't. Abbott's board worked that way, where the executive committee was very functional, and met and made decisions all the time. The rest of the board becomes undermined by that. They begin to feel like second class board members. That operates more powerfully in non-profits. There's greater need for it in a non-profit, where you put fifty or sixty people on the board mostly for fundraising purposes. But you can't have sixty people in a meeting and get anything done, so you need an executive committee. In a non-profit you know it's the executive committee which does things. So if you want to have a leadership role in a non-profit you have to work hard to get on the executive committee. But in a corporation, if you have an executive committee that makes decisions then goes to the board and just tells them things, that undermines their role and resentments develop that are not healthy. I think this is a major governance issue.

Bugos: Okay. And the companies that you serve are all start-ups. When they come to you, where do you think they envision the kind of advice you'll give, specifically on the spectrum of small company to big company?

Raab: I think all these biotech companies are started by entrepreneurs whose role model is Amgen or Genentech. I don't think it's Abbott. The first thing I guide them on is not thinking they're going to get as big as an Amgen or Genentech. The difficulty of doing it is so gigantic. People don't realize that at Genentech we raised eight hundred million dollars through private and public capital markets before we did the Roche deal. That's about the same amount that Amgen raised. I tell people in biotech that and they don't believe me. [laughs] It just takes a ton of money to be as big as Genentech. It doesn't take that kind of money to do one or two products and for the founders to be very wealthy. Maybe they're not worth half a billion dollars, but fifty millions dollars is still Okay for their own personal net worth. Plus, small companies are constantly negotiating with big companies, and I know the mentalities of both sizes of companies.

Biotech is a wonderful business. First of all with the science. Second, if you're successful, you're helping people. Third, there's no business where you can make as much money as in the pharmaceutical business. The profit margins are phenomenal. They are not significantly affected by economic cycles, though they are affected by political issues. And the complexity of the alliances and the licenses and all the interrelationships is thrilling, for a businessperson.

Industry Associations

Bugos: So moving onto those relationships. Earlier you had mentioned the impact on Genentech of your work with BIO [the Biotechnology Industry Organization], the California Healthcare Institute and the Clinton healthcare reforms. Can you outline the stories of those organizations, independent of the Genentech story? Have you had much involvement with them since 1995?

Raab: No, I have not. My time as chairman of BIO ended a few months before my time at Genentech ended. Just to go back a while, I was involved with IBA [the Industrial Biotechnology Association] before it merged into BIO. And before that I had a significant role with PhRMA [Pharmaceutical Research and Manufacturers of America] and its predecessor, the PMA, which is the pharmaceutical industry organization. From my Abbott days I was involved in their Latin American section, ran the Pacific and Far East section, and then I headed the PhRMA international section. I always went to the meetings when I was president of Abbott, but was not on the main board. I was when I became CEO of Genentech.

In all of these associations, the rule is that the board member must be the CEO of the company. There are some compromises in BIO, in that the board member from the large pharmaceutical companies can be the chief operating officer. But the biotechnology companies have to send their CEO to the board meetings. The membership adheres to the company rather than to the person. You get with dues a right to the board seat. That's normal in industry organizations. In BIO there are so many different levels of membership that companies at the highest levels--the Genentechs and the Pfizers--get automatic board seat rights. The smaller companies on the board are nominated through a more classical process.

Those associations provided a wonderful experience. And it was important for me to do it. There was nobody around in biotechnology who had my experience in the pharmaceutical organizations to bring to the biotechnology industry organizations. Also, there were no other biotechnology companies that had the resources--a Washington office and staff. When you're chairman of one of those associations you need some staff assistance from your own people if you're really going to play an effective leadership role. Amgen had it, and Genzyme. Henri Termeer, the CEO of Genzyme, succeeded me and Gordon Binder, the CEO of Amgen, succeeded him.

When 1995 came, and I ended my career with Genentech, I felt it was time to end my role in those too. Many of the CEOs of the companies I'm involved with are involved in those associations now. Tom Wiggins is on the board of BIO, Lisa Conte was on the board. The California Healthcare Institute I've lost all touch with but I know it continues to be a very productive organization. At BIO the president, whom I brought in, and I talk about once a year out of friendship. That's the way it's been with the non-profits I've worked with. It was a cherished time, to be on their boards, but once it ended I moved on and let others contribute what they can.

Bugos: So if not through these associations, if an entrepreneur wanted to contact you to pass an idea by you, how would they contact you?

Raab: People just contact me all the time. Right now I'm talking with some people who want to start a biotech company in New Zealand. A guy I know, a New Zealander, ran Roche in the UK. When Roche bought Syntex here he took charge of Syntex. He's now retired from Roche and started a company based on some technology out of a university in New Zealand and out of Cambridge University in England. So I met with them not long ago in London. I've been talking with a group from Cornell University which wants to do the first Ithaca-based biotech company. Recruiting to Ithaca is going to be a challenge. [laughs] Some professors came to me through a mutual friend. Venture capital firms talk to me all the time. A friend in San Francisco has a venture group investing money for Deutsche Bank, Alex Browne, and I'm helping them with Celtor Biosystems. I'm constantly getting business plans. Ninety-nine percent of the time I say I'm not interested but I'll give them some advice if I can. An interesting fact is that my

older son, Mike, who was a senior VP at Genzyme, just joined a very large venture capital firm, NEA [New Enterprise Associates], as a partner.

Bugos: So to go back to the trade associations. What sort of issues did you deal with at PhRMA?

Raab: When I was chairman of the Latin American regional committee board, the Far East regional committee board, and the international committee board, they were dealing with government issues, with pricing issues, approvals, patents and trademarks, importation. Most of the issues dealt with governments, which is true for all industry organizations. In the end they are lobbying organizations, representing the industry to government. They do some philanthropic work too. They have significant staffs. I think BIO today has a staff of forty people, and has a significant budget, with income from dues and some big meetings that they hold. PhRMA's income is all through dues, but again they have a giant budget.

California Healthcare Institute

Raab: California Healthcare Institute by contrast was always very modest. I not only was the first chairman, but founded this group. Its staff today may be two or three people. In my day it was one--a great guy down in San Diego named David Gollaher. He's the president to this day. We brought in the key research organizations and universities to be members of it, and that gave us an image that was quite different than if we had just been an industry organization. Other states today have tried to copy this. I do not know if they are successful.

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Raab: Massachusetts, New Jersey, the state of Washington--these are the key states with biotechnology groups. Each state has a huge market, with significant local regulation. Wilson was governor then, and we got him to understand how important biotechnology was to California. We got Willie Brown, who was in Sacramento then, aware that it was a huge industry for California. Aware how important the university-industry relationships were. On the statewide level, we influenced budgets for the universities, R&D tax credits, educational grants, and different stimulus programs to get biotech companies to construct and stay in California. They are doing even more important things today.

Plus, these state organizations influence federal legislators from these states. I had a strong relationship with Dianne Feinstein, Barbara Boxer, Nancy Pelosi, and Anna Eshoo. In Washington, California representatives became significant advocates for the industry.

Merger into BIO

Bugos: Okay, and BIO was more clearly the national organization. What was the stimulus behind the merger of the two organizations into BIO?

Raab: We saw that biotechnology was seen as very sexy, with a real future. It was seen as small business and entrepreneurial. The pharmaceutical business was seen as fat cats with the Gucci

shoes and Gulfstream jets. We flew in tourist class and wore running shoes. That was the perception in Washington. So we had the opportunity to shape new legislation.

But we had these two organizations--and this was from before my day--but the two organizations didn't get along. Each one had an executive director who disliked the other. There were jealousies between the two. The ABC [Association of Biotechnology Companies] was the smaller of the two, and made up of the smaller companies. IBA had a bigger budget, and included pharmaceutical companies as well. Efforts in Washington were diluted by this rivalry. The few of us that drove this merger saw that if they could be united into one organization it could be much more powerful. It was as simple as that, though the merger itself was very complicated.

Both executive directors were going to lose their jobs, so they weren't helpful. Then the smaller companies, afraid they would lose all power, asked for a fixed number of board seats for smaller companies. So we had a section of the organization for emerging companies which had its own board. We set up another section for agricultural products. Those companies had been mostly in the ABC, and the IBA was mostly the larger human biotech and pharmaceutical companies. We did a lot to alleviate the concerns of the various constituencies, and it worked because BIO became a very powerful organization.

How I got to be chairman: Stephen Duzan, who was the chairman and CEO of Immunex in Seattle, was the chairman of IBA. Tom Wiggins, now CEO of Connetics and then president in the Ares-Serono Group, was the chairman of the ABC. From the beginning it was agreed that neither would be chair of the new organization. Jack Castello [John L. Castello], who used to work for Abbott and was the CEO of XOMA in Emeryville, was a key catalyst for the merger. He directed the negotiations as they went on between the two chairmen--Wiggins and Duzan. Jack consulted with me and then he entered in whenever the chairmen of the organizations reached an impasse. It turned out to work very well. The three of them recommended that I then become the first chairman. I did help bring along some of the larger pharmaceutical companies, which was important because they were going to foot a lot of the bill.

The final vote had some drama. I withheld my public support of the merger until the very end. Everybody knew that if Genentech didn't support it, it wasn't going to happen. So I used that as a tool to move things forward, but nobody knew how I was going to come out. Even the night before the vote there was a dinner where people were asking me how Genentech was going to vote. There were a couple issues we had to finalize that morning, and though I knew from the beginning that I was going to support the merger, it gave me some muscle to get the right things to happen. The three of them knew I would support it in the end. For the final vote we had the membership of the two organizations come together. At the crucial moment, I stood up and made the motion for the merger. It really brought a drama to it. Then I was elected chairman.

Accomplishments at BIO

Bugos: And what did you accomplish in your first years with BIO?

Raab: We played a major role in defeating Clinton's healthcare reform. I met with every one of Clinton's key cabinet members. I met with Hillary Clinton, with Laura Tyson, Robert Ruben, Al Gore, Ron Brown, Robert Reich, Lloyd Benson, Donna Shalala, and others. And we saw

everyone of importance on the Hill. We'd go as teams. Lisa Conte would go all the time as she was the only female CEO. We were very aggressive.

PDUFA [Prescription Drug Users Fee Act] was also very important. People still complain about the FDA, but ten years ago the average review took three or four years. Today, it's fourteen months. Still too long, but a hell of a lot better. The FDA was able to hire better people. They passed that law before BIO formed, but nothing happened until there were new regulations. The law tells the agencies what they have to do, but doesn't tell them how to do it. The regulations can take years to implement. We helped a lot to expedite the regs.

Other Legislative Issues

Bugos: Genentech signed a press release just prior to the Rio summit supporting biodiversity. What was behind that?

Raab: Purely industry politics. It was a way to get back on the good side of the administration after our opposition to their healthcare reform. And I was comfortable with it because of my involvement with Shaman and my years in Latin America.

Bugos: What about other regulatory issues that have affected biotechnology over its history--biohazards, fooling with life, academics prostituting themselves, the privatization of public knowledge. Did those things appear on your radar screen during your watch with the industry associations?

Raab: Sure. When *Jurassic Park* (1993), the movie, came out we thought it would re-ignite all those issues. We had a whole plan in place to react to fears kicked up by *Jurassic Park*. Jeremy Rifkin was still an antagonist. But we never ended up having any problems. Once you make a drug, and prove that it is safe and helping whomever is taking it, then everybody thinks of it as a drug and forgets that it came from a genetically engineered technology.

Bugos: At Genentech, did you ever have any issues with accidental release?

Raab: No. The only time that became a concern is when we brought HIV into the company. We had a class four containment facility built, spent a lot of money on that. There were some people at Genentech who voiced concern that we were, theoretically, threatening the lives of people at Genentech by bringing this virus into the company. But we never had any problems.

Animal Rights and Other Issues

Raab: Same with animal rights activists. We thought that we might get into some conflicts over animal rights. We had ethical committees, reviews by outside groups, to look at our animal experiments. We controlled that very carefully, and tried to do what was right. You can't be in the drug development business without doing animal experiments. Genentech only has rodents and pigs. No dogs or primates.

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Raab: We did all the primate work outside the company. Most of what we did at Genentech was for the work of the research scientists. We had two animal facilities at Genentech, one in the research labs, and another big animal building which is in South San Francisco but not painted in Genentech colors. We did a lot of the classic toxicology and carcinogenicity that is IND enabling [required to submit an Initial New Drug Application to the FDA] by outsourcing. Maybe seventy percent of all animal work was contracted outside, to companies with big industrial sized works.

Bugos: What about the issue of scientists bending their work for gold?

Raab: That's baloney. I think one of the great strengths of biotechnology is the fusion of government research, academia, and industry, and the acceptance by academic and government scientists of the role that business plays. After all, the point of that science is to create something that makes somebody live longer and better, not just to get a paper published in a journal or to make money. And academia and government have never created a product and put it on the shelf in a bottle. That transfer to industry happened with Herb Boyer. It's very American.

Remember, Herb Boyer was never an employee of Genentech, in the same way Bill Rutter was never an employee of Chiron. They maintained their academic positions but were able to benefit from their work. Stanley Cohen never entered industry, and was never financially rewarded in the way that Herb was. And I think that's unfortunate. Now all the universities have business offices that negotiate for the scientists.

We had lots of ongoing activities with Stanford, UCSF, UCLA, UC San Diego and most all of the great centers in the East. In our business development group we always had two or three people whose full-time job it was to look for developments in universities. We supplied our reagents to academic scientists. We had a group that just coordinated that. It was very active but we didn't make a big deal of it.

Bugos: What about genomics? Was sequencing the genome in order to make better drugs something you considered doing while at Genentech?

Raab: No. We knew that others would do it and we could then access that work. That's just what happened. I did testify with Jim Watson and Lee Hood at a Senate hearing supporting the genome project.

Ethics of Biotechnology

Bugos: One last question, of an ethical bent. Tom Perkins in his interview mentioned that he initially thought the big technical risk was whether God would let you make a new organism. So my question for you is, do you have a moral engagement with the work of recombinant DNA? Is there a larger creation-of-life perspective that you have developed for yourself based on your involvement with Genentech?

Raab: That's a big question to end an interview on. [laughs] I'm fundamentally a Unitarian. I decided long ago not to try to figure out if there is a God or not. I don't think anybody can. Obviously, a lot of people believe--have faith--that there is a God. That is wonderful for them. I decided that

dealing with the existence of a spiritual force was not necessary for me to do what I believe is important and right in life. What guides my activities is what I believe is good for my fellow human beings. I believe I can make that decision, and that's good enough.

I am so constantly amazed by the human body, and especially by what we don't know about it. I think it is the job of leaders to take the knowledge that we do have and use it to the betterment of humankind. One of the ethical issues is whether you start to create life--like cloning human beings--rather than delivering things that are meant to improve the quality and/or the length of life. I dislike that sort of activity fundamentally because it hurts and confuses the process of using our knowledge to help human beings. The attitude toward stem cells now concerns me because it may slow down the use of these biological tools to help people. I deal with this more on an ethical rather than a moral plain. I think it's much easier to judge things ethically than morally. I've seen people justify morally almost anything they want to. It's clearer when you try to look at the ethics of things.

Bugos: Okay. Since this is our last interview, any closing thoughts?

Raab: The final thing I'd like to say to anyone who looks at all we have said in these interviews is that what I've talked about here has given me great joy in my life. I am incredibly fortunate. Secondly, I thank all those who did support and help me. I also apologize to those I disappointed. And finally, since these interviews focused on my work life, there has been little mention of my family. It is large and wonderful and is my greatest joy.

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TAPE GUIDE -- G. Kirk Raab

APPENDICES

Biography

G. Kirk Raab

G. Kirk Raab was born 27 September 1935 on Long Island, New York to George R. and Ann Marie Raab. In 1959 he earned a bachelors degree with honors from Colgate University, and was president of the Alpha Tau Omega fraternity. He later served as a trustee of Colgate University. He is also an honorary member of Exeter College of Oxford University.

In June of 1959 he started calling on general practitioners in Brooklyn for Pfizer, Inc., then rose through Pfizer's sales and marketing ranks in the United States and Latin America. From 1965 through 1968 he worked as general manager for Mexico for A.H. Robins, Inc. From 1968 through 1975 he served as vice president, Latin America for Beecham Group, Ltd. For eleven years Raab lived and worked in Latin America.

In 1975, Raab joined Abbott Laboratories, headquartered in North Chicago, Illinois, as vice president, Latin America. In 1976 he was promoted to executive vice president, international operations and oversaw Abbott sales operations around the world. In 1981 he was named Abbott president, chief operating officer, and director. He oversaw Abbott's equity investment in Amgen, Inc. and from 1981 to 1985 served on the Amgen board of directors.

Raab joined Genentech in February 1985 as president and chief operating officer, as well as a member of the board of directors. In February 1990 Raab also became chief executive officer of Genentech. In July 1995 Raab resigned as CEO of Genentech. This interview focuses on his tenure at Genentech.

Raab then grew more involved with a variety of biotechnology companies. In 1995 he was elected chairman of Shaman Pharmaceuticals of South San Francisco, a company doing ethnobotanical drug discovery, after he had served as a company director since 1992. He also continued on the board of another company he had joined while still with Genentech--Oclassen Pharmaceuticals. He had also served on the board of Cholestech, Inc. though resigned prior to 1995. In 1995 he was elected non-executive chairman of Oxford Glycosciences, Ltd. of Oxford, England, and later represented that company on the Oxford University Chancellor's Court of Benefactors. In October 1995, he was elected chairman of Connetics Corporation of Palo Alto which was developing Relaxin under license from Genentech. He was also elected chairman of Accumetrics, Inc. a cardiac monitoring company in San Diego, Sinogen International Ltd. in China, and LXR Biotechnology, Inc. in Richmond, California. He serves as chairman of Medgenics, Inc., an Israeli company developing a pump device for long-tem delivery of therapeutic proteins. He has also served as a director of Applied Imaging, Inc. of Santa Clara, Velos Medical Informatics, Inc. of Fremont, Bridge Medical Inc. of San Diego, Veranto, and Celtor Biosystems, Inc.,

He helped launch two of the biotechnology industry's key political action groups. In June 1993, Raab was elected to a two year term as inaugural chairman of the board of directors of Biotechnology Industry Organization (BIO), a 560-member trade organization created by the merger of the Industrial Biotechnology Association and the Association of Biotechnology Companies. He also served as the founding chairman of the California Healthcare Institute, also from 1993 to 1995. From 1990 to 1995 he served as a director of the Pharmaceutical Research and Manufacturers of America (PhRMA).

He serves as a director of the National Science and Technology Medals Foundation. He has also served as a trustee of the San Francisco Ballet, the San Francisco Symphony, Golden Gate Planned Parenthood, and San Francisco Public Radio and Television (KQED).

He has six children: Michael George, Alyson Ann, Kristina Elizabeth, Andrea, Julia Woodson, and Dean Kirk.

G. KIRK RAAB
3400 West Bayshore Road
Palo Alto, CA 94303
Tel: 650 739 2901
Fax: 650 494 9341

EXPERIENCE

Present

Oxford GlycoSciences, Ltd., Oxford England
Chairman, Board of Directors

Connetics Corporation, Palo Alto, California
Chairman, Board of Directors

Medgenics, Inc., Israel *
Chairman, Board of Directors

Bridge Medical, Inc., San Diego, California *
Member, Board of Directors

Applied Imaging, Inc., Santa Clara, California
Member, Board of Directors

Velos Medical Informatics, Inc., Fremont, California *
Member, Board of Directors

National Foundation for Science and Technology Medals
Member, Board of Directors

* private company

1985 - 1995	**Genentech, Inc.**, South San Francisco, California
1990 - 1995	President, Chief Executive Officer and Director
1985 - 1990	President, Chief Operating Officer and Director
1975 - 1985	**Abbott Laboratories,** North Chicago, Illinois
1981 - 1985	President, Chief Operating Officer and Director
1976 - 1980	Executive Vice President, International Operations
1975 - 1976	Vice President, Latin America
1968 - 1975	**Beecham Group, Ltd.** Vice President, Latin America
1965 - 1968	**A. H. Robins, Inc.** General Manager, Mexico
1959 - 1965	**Pfizer, Inc.** Sales and Marketing, United States and Latin America

- First Chairman of the Board of Directors of the Biotechnology Industry Organization (BIO) (1993-1995)
- Founding Chairman of the California Health Care Institute (1992-1995)
- Board of Directors of the Pharmaceutical Research & Manufacturers of America (PhRMA) (1990-1995)
- Board of Directors, Amgen, Inc. (1981-1985)

Former Board of Trustees: San Francisco Ballet, San Francisco Symphony, Golden Gate Planned Parenthood, San Francisco Public Radio and Television (KQED)

PERSONAL
Date of Birth: September 27, 1935, New York
Married, 5 children
BA, Colgate University (with honors)
Colgate University Trustee Emeritus
Member, Exeter College and The Chancellors Court, Oxford University

G. KIRK RAAB HISTORY

9/27/35	Born: Minneola, New York – only child – lived in Queens, NYC
9/36	Moved to Rockville Center, Long Island, NY. Wilson Grammar School. Great friends, Peter Coots, John Crow, Al Simpson. Sunday School, Congregational Church South Side High School (football, track, fair student)
6/51	Parents moved back to Queens, summer home Newtown, Conn.
6/53	Graduated St Paul's Episcopal School, Garden City, NY (football, golf, good student)
9/53 – 6/54	Colgate University, Hamilton, NY. Left to join the Army and grow up.
9/54 – 6/56	U.S. Army – Cpl., Basic & Clerk training, Fort Dix, NJ, Ramstein Air Base, Germany – edited newspaper, inspection team. Traveled all over Europe including 3 weeks with parents Christmas 1955. Visited father's older sister (Christina) and her family in Barcelona.
9/56 – 6/59	Returned to Colgate University – graduated honors with Political Science and Fine Arts. GI Bill of Rights, full tuition scholarship senior year. President ATO; Executive Editor Newspaper; ran three businesses with great friend Tom Treadwell. Summer 57 sold Vicks products – NY, NJ and Kentucky. Summer 58 – market research and sold for Merrill Pharmaceuticals – Houston, Texas and Cincinnati, Ohio. Last semester lived and studied in Washington D.C. (mainly at the FDA and assistant to a Congressman).
6/59 – 8/65	Pfizer USA – Salesman, Advertising Manager, Product Manager; Salesman and Consultant Brazil and Argentina, head of pharmaceutical business Chile. Major accomplishments: Advertising – re-birth Terramycin, Marketing – re-birth Vistaril, set up Product Manager system Brazil and Argentina, revitalized Chilean business. Left Pfizer in Chile due to elimination of overseas Americans. Learned good Spanish, fair Portuguese. Great friend – Tom Lazor. Why the pharmaceutical business? My plan after Colgate was to do graduate work overseas – I received a Fulbright to study in the Philippines and a Norwegian government scholarship to study their "Folkarschool" system. But spring vacation 1959 I decided I wanted instead to make some money and from my Vicks, Merrill and FDA experience that pharmaceuticals was a great opportunity. Also, I decided that Pfizer was the most dynamic company. My Father worked in Brooklyn (then Pfizer's headquarters location) and knew the VP-Personnel. I had interviews including with the Chairman & CEO and was hired (along with 4 others – all with MBA's) in a new training program.

	Why Latin America? In 1961 on a hunting trip (with Lazor) I was approached to join Roche as an Advertising Manager for a new product (turned out to be Valium) at $18,000/year and I was making $5,700! I turned it down as I believed that was so much money (my Father' top salary was $18,000) that I would be stuck in advertising. I told Pfizer of the offer (I had already turned it down) and that I would like 3 things: more money (got $500); to be a Product Manager (I was 6 months later) and to go overseas (I did in July 63 to Latin America – where they were very large). The reason was more diverse and rapid general manager opportunities.
4/30/60	Married Astrid Lois Lindberg, St. Michael's Episcopal Church, NYC, Reception Harvard Club. Met 9/59 on a blind date through a mutual friend – worked in Public Relations, linguist, attended Columbia U, Ballet dancer. Father: Norwegian, Harvard Business School Professor. Mother: nurse, homemaker from Ohio. Children: Kristina Elizabeth – NYC – 11/23/60 Alyson Ann – NYC – 3/12/63 Michael George – Santiago, Chile – 11/24/64
4/60 – 11/65	Lived in Upper West Side NYC (4/60-6/63), Sao Paulo, Brazil (7/63-2/64), Buenos Aires, Argentina (2/64-5/64), Santiago, Chile (5/64-9/65), great friend – Gary Briggs, NYC (9/65-11/65).
12/65 – 2/68	General Manager, Mexican subsidiary, A. H. Robins, Inc. – Richmond, Virginia
12/65 – 2/73	Lived in Mexico – Chapultepec Golf Club' Publisher, Mexican American Chamber of Commerce Review; Children at American School; rented homes in Lomas de Chapultepec and Los Leones. Owned and did major re-model of home on K.18 to Toluca. Helped start Unitarian Church. Great friend – Toss Olsen.
3/68 – 11/72	Director, Latin America – Beecham Group Ltd. Started cellar of home with Secretary (Teresa Gonzalez) – set up companies in all major countries, made acquisitions – Brazil, Argentina and Mexico. Grew business (antibiotics) from $5 to $65 million. Traveled a lot – Latin America, NY, London – too bad no Mileage Plus.
2/73 – 6/75	Family moved back to States – Brookside, NJ – children attended Mendham Grammar and Middle Schools.
11/72 – 5/73	Executive Vice President, Pharmacaps Inc., Elizabeth, NJ – soft gelatin capsule company (disaster as founder not willing to give up control and stop questionable practices).

5/73 – 2/75	Returned to Beecham (in Clifton, NJ) as Vice President, Latin America. Left for much better opportunity as any promotion would have meant move to UK and we wanted to remain in States.
3/75 – 1/85	Abbott Laboratories, North Chicago, IL (Sales increased from $700 M to $4 B).
3/75 – 11/76	Vice President, Latin America.
11/76 – 2/80	Vice President, International
2/80 – 6/81	Executive Vice President and Director
7/81 – 1/85	President, Chief Operating Officer and Director

Latin America – turned around a money-losing business closing Coral Gables office, factories in Jamaica, Nicaragua and Bolivia, hired new senior management team including successor. Major new product-introductions and new factories Ecuador, Brazil, Mexico, Venezuela and Guatemala.

Most wonderful moment: was second American businessman to return to Cuba in 5/76 – went for a week with 5 of my executives. Last night after an evening at the Tropicana Night Club spent from 1.00-5.00 am drinking rum and smoking cigars with Fidel Castro – truly memorable moment in my life.

International Division – responsible for Latin America, Canada, Africa, Middle East, Far East and Japan as well as marketing, manufacturing, quality, strategic planning and new product development. Made major acquisition in Brazil, negotiated majority control with Japanese partner, closed plants in Sri Lanka, Bangladesh, Rhodesia, Egypt and Turkey. Built new plants USSR, Pakistan, India, Indonesia, Thailand and Australia. Created whole new headquarters management structure, in-licensed new products for non-U.S. sales, and took leadership role in corporate pharmaceutical research.

Executive VP (Board 3/81) – responsible for Pharmaceuticals, New Product Licensing, Consumer Products, Corporate Engineering, Quality, Puerto Rico manufacturing and JV with Takeda Pharmaceuticals (TAP). Made major investment in Amgen and Boston Scientific, changed President of Pharmaceutical Business and R&D, then re-organized Pharmaceutical research and development, in-licensed 2 major new products, launched first new consumer product in 10 years, built large co-generation plant in Puerto Rico as well as major new facilities in Illinois – including R&D building, North Carolina and Puerto Rico.

President – responsible for U.S. businesses and staff except HR and Finance. Abbott grew incredibly – much from re-organization and major investments in Diagnostics, Home Care, plastic mini-bags, cost reductions, pharmaceutical R&D, and increased nutritional market shares (Ross).

3/81 – 12/84	Board Member and active in guiding CEO George Rathman (ex-Abbott VP) in the creation of Amgen Inc. Invested $5MM in 1981. Abbott sold stock in 1990 for $680MM.
7/75 – 8/83	Lived in Barrington Hills, IL – beautiful home. 5 acres – student of Frank Lloyd Wright – children graduated from Barrington High School – Kristina, Carlton College – graduated U of Illinois, Alyson, Miami of Ohio – graduated Columbia College, Mike – graduated De Paul University. Active – Barrington Hills Country Club, Lake Zurich Golf Club, Chicago Club, Art Institute of Chicago, Chicago Botanical Gardens – Who's Who in America.
9/25/83	Separated from Astrid (Divorced 9/14/86) – a very difficult and sad process.
11/83 – 3/84	Rented in Lake Forest, IL
4/84 – 7/85	Bought townhouse near north side of Chicago – lived with future wife, Mollie Elizabeth Painter whom I met playing golf (Pinehurst #2) at an Abbott Sales meeting (Abbott Product Manager, East Carolina University and MBA Northwestern. Father retired Colonel from Oregon, Mother from large prominent Greenville, NC family.)
1/85	Resigned from Abbott due to unsuccessful relationship with Chairman and CEO. (The previous COO lasted 14 months, I lasted 3_ years, and my successor 2 years – then the Chairman got the axe.)
2/85	Elected President, Chief Operating Officer and Director of Genentech Inc. (180 employees, 2_ buildings, $50 million cash – no product sales – valuation about $500 million). I never interviewed for any other job – I wanted Biotech and California, and Genentech and San Francisco were my dreams come true.
8/86	Alyson married to Bill Bailey (architect) – children, Emma and Ethan (3/95) and Evan (5/99)
12/6/86	Married Mollie on Iguana Island in the Virgin Islands with 28 family and friends participating. Lived in San Francisco, built home in Hillsborough 12/86-8/95 and extraordinary home in Woodside (3_ years to construct) 10/95 – 10/98. Dean Kirk and Julia Woodson born at UCSF 11/26/89, attending Nueva School for gifted children. Marin Country Club, Green Hills Country Club, Pacific Union Club, Links Club, Burlingame Country Club. (Good friends – Dick Breaux, Tom Wiggans.)
8/87	Kristina married to Brad Strand (hitech executive) – children, Benjamin (11/90), Avery (8/95), and Liam (4/02)
10/87	Mike married to Libby (architect) – daughter, Eleanor (12/98)

2/90	Elected Chief Executive Officer
7/95	Resigned from Genentech (3000 employees, 17 buildings, $1 billion cash, sales over $800 million – valuation $8 billion) due to the Board of Directors disapproval over discussions I had with the Chairman of Roche over a personal loan, even though it never happened. Human insulin, Alpha Interferon and Factor VIII sold by licensees and we marketed Hgh, TPA, Gamma Interferon, and DNase – sales force from 2 to 400. 9 major products in clinical trials – 2 for cancer with major sales in 1999. Reorganized R&D organization promoting Art Levinson 5 times to lead it, who in tum succeeded me as CEO. Concluded two agreements for major investments with Roche – founded and chaired Califomia Health Care Institute, first Chairman, Biotechnology Industry Organization (800 members) Board Member O'Classen, Shaman and Cholestech Pharmaceuticals, San Francisco Ballet, San Francisco Symphony, Planned Parenthood, and the Pharmaceutical Manufacturers Association. Served as a trustee of Colgate University (88-97), Chair, Committee on Faculty and Academics, Vice-Chair, 1995 Capital Campaign, and established G. Kirk Raab Chair in Biology.
9/38/97	Separated from Mollie (Divorced 9/99)
Fall 95	Chairman, Shaman Pharmaceuticals, CA Chairman, Connetics Corporation, CA Chairman, Oxford GlycoSciences Ltd., UK
1996	Chairman, Sinogen Ltd., China Board Member, Applied Imaging Board Member, Bridge Medical, Inc.
1997	Board Member, Accumetrics, Inc.
1998	Chairman, LXR Biotechnology Inc. Resigned, Sinogen Ltd. (conflict with VC's)
1999	Chairman, United Medical Industrial Group (China) Chairman, Accumetrics, Inc. Resigned, LXR Biotechnology, Inc. (didn't make it, sold assets) Resigned, United Medical Industrial Group (didn't make it)
2000	Resigned, Shaman Pharmaceuticals, Inc. (changed direction to food supplements) Board Member, Veranto, Inc. and Velos Medical Informatics, Inc. Chairman, MedGenics, Inc. (Israeli Biotech company)
2001	Resigned, Veranto, Inc. (merged with parent company) Resigned, Accumetrics, Inc. (sold company) Board Member, ePhysician, Inc. Board Member, Celtor Biosystems, Inc.
2002	Reigned, ePhysician, Inc.

9/29/01	Married Maryann, real estate broker, raised in Kansas City and Crystal Lake, IL, attended Cal State Hayward, lived in England and Spain; mother is Norwegian (amazing) living in Sonoma, and Father retired living in Denver. One daughter Andrea, age 28, married to Darren Leggett.
Present	Residences: Portola Valley, California and vacation home in Scottsdale, Arizona. Member, Burlingame Country Club, Sankaty Head Golf Club, Desert Mountain Country Club, National Science and Technology Medals Foundation,; Trustee Emeritus, Colgate University, and Honorary Fellow, Exeter College and Member, Chancellor's Court of Benefactors, Oxford University.

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Genentech, Inc.
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Genentech, Inc.

May 2, 1990

Dear Stockholder:

You are cordially invited to attend the Annual Meeting of Stockholders of Genentech, Inc. to be held on Friday, June 8, 1990 at 10:00 a.m., local time, at the Westin Hotel, One Old Bayshore Highway, Millbrae, California.

At the Annual Meeting, you will be asked to consider and vote upon a proposal to approve an Agreement and Plan of Merger (the "Merger Agreement") pursuant to which a wholly-owned subsidiary of Roche Holdings, Inc. ("Roche") will be merged with and into Genentech (the "Merger"). In the Merger, each outstanding share of Genentech Common Stock will be converted into $18 in cash and one half share of new Genentech Redeemable Common Stock. Thus, the Merger will result in your receiving $36 in cash and one share of Redeemable Common Stock for each two shares you currently own. The Redeemable Common Stock will be listed on the New York Stock Exchange and will be substantially identical to your current common shares, except that it will be redeemable, at the election of Roche, until June 30, 1995, at redemption prices increasing from $38 to $60 per share during such period. If any shares of the Redeemable Common Stock are redeemed, all must be redeemed.

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Roche will provide all of the cash to be received by Genentech stockholders in the Merger in exchange for their shares and will in addition invest approximately $490 million in cash directly in Genentech. As a result, Roche will own approximately 60% of the equity of Genentech immediately after the Merger. After the Merger, Genentech will be a public company, managed by a Board comprised of a majority of independent directors.

The Merger Agreement is the result of a careful exploration of strategic alternatives by Genentech and its Board of Directors. While Genentech currently markets two products, the Board believes that Genentech has excellent long-term potential based on the prospective products that are currently in various stages of Genentech's research and development pipeline and on the unique scientific resources that Genentech can bring to bear on their development. The development of these prospective products will require a significant ongoing financial commitment by Genentech, the rewards of which are potentially great but inherently uncertain. In light of such uncertainty and the extent of the financing necessary for Genentech to pursue and fulfill its potential, as well as the consolidation and internationalization currently taking place in the pharmaceutical industry, the Board concluded that the best interests of Genentech's stockholders lay in Genentech seeking a strategic alliance with another company.

Your Board of Directors unanimously believes that the strategic alliance with Roche contemplated by the Merger Agreement is in the best interests of Genentech and its stockholders. The cash payment of $18 per share that will result from the Merger provides stockholders with an immediate return on their investment in Genentech at a fair price and, correspondingly, significantly reduces the risk faced by stockholders with respect to Genentech's future. In this regard, the Board views the Merger as, in effect, a means for stockholders to sell half of their shares for $36 per share in cash. The Board has not assigned a specific value to the Redeemable Common Stock to be received by stockholders in the Merger in respect of the other half of their shares. Rather, through the Redeemable Common Stock, stockholders will continue to have an equity investment in Genentech and thus be able, subject to the redemption right, to participate in Genentech's future growth. The prospects for that growth should be enhanced by the funds Roche will invest directly in Genentech.

At the Annual Meeting, you will also be asked to elect four directors, to consider and vote upon the adoption of Genentech's 1990 Stock Option/Stock Incentive Plan, to ratify the selection of Genentech's independent auditors and to transact such other business, if any, as may properly come before the Annual Meeting.

YOUR BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE *FOR* APPROVAL OF THE MERGER AGREEMENT, *FOR* THE BOARD'S NOMINEES FOR ELECTION AS DIRECTORS, *FOR* ADOPTION OF THE 1990 STOCK OPTION/STOCK INCENTIVE PLAN AND *FOR* RATIFICATION OF THE SELECTION OF GENENTECH'S INDEPENDENT AUDITORS.

The accompanying Proxy Statement/Prospectus, which you are urged to read carefully, provides important detailed information concerning the proposed Merger and additional information concerning the other matters to come before the Annual Meeting. Whether or not you plan to attend the Annual Meeting, please complete, date and sign your proxy card and promptly return it in the enclosed envelope. If you attend the Annual Meeting, you may vote in person even though you have previously returned a proxy.

On behalf of the Board of Directors,

Robert A. Swanson
Chairman of the Board

G. Kirk Raab
President and Chief
Executive Officer

GENENTECH, INC.
460 Point San Bruno Boulevard
South San Francisco, CA 94080

NOTICE OF ANNUAL MEETING
To be held on June 8, 1990

To the Stockholders of Genentech, Inc.:

NOTICE IS HEREBY GIVEN that an Annual Meeting of the Stockholders (the "Annual Meeting") of Genentech, Inc., a Delaware corporation ("Genentech"), will be held at the Westin Hotel, One Old Bayshore Highway, Millbrae, California, on Friday, June 8, 1990, commencing at 10:00 a.m., local time.

The purposes of the Annual Meeting will be:

(1) To consider and vote upon a proposal (the "Merger Proposal") to approve the Agreement and Plan of Merger dated as of February 2, 1990 (the "Merger Agreement") among Genentech, Roche Holdings, Inc., a Delaware corporation ("Roche") and HLR (U.S.), Inc., a Delaware corporation and a wholly-owned subsidiary of Roche ("Merger Subsidiary"), pursuant to which, among other things, (i) Merger Subsidiary will be merged with and into Genentech (the "Merger"), with Genentech being the surviving corporation, (ii) the Certificate of Incorporation of Genentech will be amended by operation of the Merger to authorize the issuance by Genentech of Redeemable Common Stock, par value $.02 per share (the "Redeemable Common Stock"), and to add a new ARTICLE ELEVENTH thereto providing for certain approval requirements for business combination transactions between Genentech and Roche and its transferees, (iii) each outstanding share of Common Stock, par value $.02 per share of Genentech (the "Shares") (other than Shares as to which appraisal rights have been perfected), will be converted pursuant to the Merger into $18.00 in cash and one-half share of Redeemable Common Stock, and (iv) the outstanding common stock of Merger Subsidiary will be converted pursuant to the Merger into Shares representing approximately 60% of the equity of Genentech to be outstanding following the Merger, in exchange for which Roche will provide the aggregate cash consideration to be received by stockholders for their Shares in the Merger and in addition will invest $491.5 million in cash (subject to adjustment as provided in the Merger Agreement) directly in Genentech. Approval of the Merger Proposal by Genentech's stockholders will also constitute approval of the treatment and disposition of outstanding options and rights under, and certain amendments to, Genentech's existing employee stock option plans and employee stock purchase plan contemplated by the Merger Agreement.

(2) To elect four directors to the 1993 Class of the Board of Directors of Genentech for a term of three years.

(3) To consider and vote upon adoption of Genentech's 1990 Stock Option/Stock Incentive Plan.

(4) To ratify the selection by the Board of Directors of Ernst & Young as Genentech's independent auditors for the year ending December 31, 1990.

(5) To transact such other business as may properly come before the meeting or any adjournments or postponements thereof.

Holders of the Shares have the right to dissent from the Merger and obtain a judicial determination of the "fair value" of their Shares and to receive payment therefor by following the procedures prescribed in Section 262 of the Delaware General Corporation Law, which is attached as Annex B to, and summarized under "The Merger Proposal—Stockholders' Appraisal Rights" in, the accompanying Proxy Statement/Prospectus.

Detailed information relating to the Merger Proposal and related matters, as well as the other matters to be considered at the Annual Meeting, is contained in the accompanying Proxy Statement/ Prospectus, and the annexes thereto, which form a part of this Notice.

The Board of Directors has fixed the close of business on April 12, 1990 as the record date for determining the stockholders entitled to receive notice of, and to vote at, the Annual Meeting or any adjournment or postponement thereof. A complete list of such stockholders will be available at Genentech's headquarters, 460 Point San Bruno Boulevard, South San Francisco, California, for ten days before the meeting.

ALL STOCKHOLDERS ARE CORDIALLY INVITED TO ATTEND THE MEETING. TO ENSURE YOUR REPRESENTATION AT THE MEETING, HOWEVER, YOU ARE URGED TO COMPLETE, DATE, SIGN AND RETURN THE ENCLOSED PROXY AS PROMPTLY AS POSSIBLE. A POSTAGE-PREPAID ENVELOPE IS ENCLOSED FOR THAT PURPOSE. ANY STOCKHOLDER ATTENDING THE MEETING MAY VOTE IN PERSON EVEN IF THAT STOCKHOLDER HAS RETURNED A PROXY.

By Order of the Board of Directors.

John P. McLaughlin
Secretary

South San Francisco, California
May 2, 1990

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PROXY STATEMENT/PROSPECTUS

GENENTECH, INC.
460 Point San Bruno Boulevard
South San Francisco, CA 94080

PROXY STATEMENT/PROSPECTUS OF
GENENTECH, INC.
FOR THE ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON JUNE 8, 1990

This Proxy Statement/Prospectus ("Proxy Statement") constitutes the Proxy Statement of Genentech, Inc., a Delaware corporation ("Genentech"), and relates to the solicitation of proxies for use at the Annual Meeting of Stockholders of Genentech (the "Annual Meeting") scheduled to be held on Friday, June 8, 1990, at 10:00 a.m., local time, at the Westin Hotel, One Old Bayshore Highway, Millbrae, California, and any adjournments or postponements thereof. At the Annual Meeting, Genentech's stockholders will be asked to consider and vote upon a proposal (the "Merger Proposal") to approve the Agreement and Plan of Merger dated as of February 2, 1990 (the "Merger Agreement") among Genentech, Roche Holdings, Inc., a Delaware corporation ("Roche") and HLR (U.S.), Inc., a Delaware corporation and a wholly-owned subsidiary of Roche ("Merger Subsidiary"), pursuant to which, among other things, (i) Merger Subsidiary will be merged with and into Genentech (the "Merger"), with Genentech being the surviving corporation, (ii) the Certificate of Incorporation of Genentech (the "Certificate of Incorporation") will be amended by operation of the Merger to, among other things, authorize the issuance by Genentech of Redeemable Common Stock, par value $.02 per share (the "Redeemable Common Stock") and to add a new ARTICLE ELEVENTH thereto providing for certain approval requirements for business combination transactions between Genentech and Roche and its transferees, (iii) each outstanding share of Common Stock, par value $.02 per share of Genentech (the "Shares") (other than Shares as to which appraisal rights have been perfected), will be converted pursuant to the Merger into $18.00 in cash and one-half share of Redeemable Common Stock (the "Merger Consideration"), and (iv) the outstanding common stock of Merger Subsidiary will be converted pursuant to the Merger into Shares representing approximately 60% of the equity of Genentech to be outstanding following the Merger. Pursuant to the Merger Agreement, Roche will provide the aggregate cash consideration to be received by stockholders in the Merger in exchange for their Shares and in addition will invest $491.5 million in cash (subject to adjustment as provided in the Merger Agreement) directly in Genentech at the time that the Merger is consummated. See "The Merger" and the Merger Agreement, which is attached as Annex A to this Proxy Statement. Approval of the Merger Proposal by Genentech's stockholders will also constitute approval of the treatment and disposition of outstanding options and rights under, and certain amendments to, Genentech's 1984 Incentive Stock Option Plan and 1984 Non-Qualified Stock Option Plan (the "1984 Option Plans") and Genentech's 1987 Employee Stock Plan (the "1987 Plan") contemplated by the Merger Agreement. See "The Merger Agreement — Treatment of Stock Options and Stock Purchase Rights." At the Annual Meeting, Genentech's stockholders will also be asked to elect four directors, to consider and vote upon the adoption of Genentech's 1990 Stock Option/Stock Incentive Plan, to ratify the selection of Genentech's independent auditors, and to transact such other business, if any, as may properly come before the Annual Meeting.

This Proxy Statement also constitutes the Prospectus of Genentech with respect to the shares of Redeemable Common Stock to be issued pursuant to the Merger. Genentech has filed a Registration Statement on Form S-4 (the "Registration Statement"), of which this Proxy Statement is a part, with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), covering the shares of Redeemable Common Stock to be issued pursuant to the Merger.

The shares of Redeemable Common Stock to be issued in the Merger will be redeemable by Genentech, in whole but not in part, at any time on or prior to June 30, 1995. Pursuant to the Governance Agreement to be entered into by Roche and Genentech at the time that the Merger is consummated (the "Governance Agreement"), Genentech will be prohibited from effecting such redemption unless requested by Roche, and will be required to effect such redemption upon Roche's request, provided that Roche first deposits in trust sufficient funds to pay the aggregate redemption price of all outstanding shares of Redeemable Common Stock. The per share redemption price of the Redeemable Common Stock will be $38.00 per share until December 31, 1990, $39.00 per share if the shares are redeemed between January 1, 1991 and March 31, 1991, $40.00 per share if the shares are redeemed between April 1, 1991 and June 30, 1991 and thereafter will increase by $1.25 per share per quarter up to $60.00 per share if the shares are redeemed between April 1, 1995 and June 30, 1995 subject, in each case, to certain adjustments. If the Redeemable Common Stock has not been redeemed on or prior to June 30, 1995, each then outstanding share of Redeemable Common Stock will automatically be converted into one Share. Except for the redemption feature and a $.01 per share liquidation preference over the Shares, the rights, preferences, privileges and restrictions of the Redeemable Common Stock are substantially identical to those of the Shares. The Redeemable Common Stock is not redeemable at the option of the holder. See "Description of the Redeemable Common Stock."

This Proxy Statement is first being mailed to Genentech's stockholders on or about May 2, 1990.

The Shares are traded on the New York Stock Exchange, Inc. (the "NYSE") and the Pacific Stock Exchange, Inc. (the "PSE"). The last reported sale price of the Shares on May 1, 1990 on the NYSE composite tape was $25.25. No shares of Redeemable Common Stock will have been issued prior to the Merger. The NYSE has approved the listing, subject to notice of issuance, of the Redeemable Common Stock which is to be issued pursuant to the Merger.

The date of this Proxy Statement/Prospectus is May 2, 1990.

No person has been authorized to give any information or to make any representation not contained in this Proxy Statement, and, if given or made, such information or representation should not be relied upon as having been authorized. Under the rules and regulations of the Commission, the proposal to approve the Merger constitutes an offer of Redeemable Common Stock to holders of Shares. The delivery of this Proxy Statement does not constitute an offer to sell, or the solicitation of an offer to purchase, the securities offered hereby or a solicitation of a proxy in any jurisdiction where such offer or solicitation would be unlawful. Neither the delivery of this Proxy Statement nor the issuance of any securities hereunder shall under any circumstances create any implication that there has been no change in the affairs of Genentech since the date as of which information is furnished or the date hereof.

THE REDEEMABLE COMMON STOCK TO BE ISSUED PURSUANT TO THE MERGER AND THE TRANSACTIONS CONTEMPLATED THEREBY HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION NOR HAS THE COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROXY STATEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

AVAILABLE INFORMATION

As permitted by the rules and regulations of the Commission, this Proxy Statement omits certain information contained in the Registration Statement. For such information reference is made to the Registration Statement and the annexes thereto. Genentech is subject to the informational requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and in accordance therewith files reports, proxy statements and other information with the Commission. The Registration Statement of which this Proxy Statement forms a part, as well as reports, proxy statements and other information filed by Genentech, can be inspected and copied at the Commission's Public Reference Room, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549; and at the public reference facilities maintained by the Commission at its regional offices located at Room 1204, Kluczynski Federal Building, 230 South Dearborn Street, Chicago, Illinois 60604; and Room 1400, 75 Park Place, New York, New York 10007. Copies of such materials can be obtained from the Commission at prescribed rates from the Public Reference Section of the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549. The Shares are listed on the NYSE and the PSE, and such reports, proxy statements and other information concerning Genentech should be available for inspection at the offices of the NYSE, 20 Broad Street, New York, New York 10005, and the offices of the PSE, 301 Pine Street, San Francisco, California 94104.

THIS PROXY STATEMENT INCORPORATES BY REFERENCE DOCUMENTS THAT ARE NOT PRESENTED HEREIN OR DELIVERED HEREWITH. THESE DOCUMENTS (OTHER THAN EXHIBITS TO SUCH DOCUMENTS, UNLESS SUCH EXHIBITS ARE SPECIFICALLY INCORPORATED BY REFERENCE INTO THE INFORMATION INCORPORATED HEREIN) ARE AVAILABLE WITHOUT CHARGE, UPON ORAL OR WRITTEN REQUEST BY ANY PERSON RECEIVING THIS PROXY STATEMENT, FROM THE CORPORATE SECRETARY OF GENENTECH, INC., 460 POINT SAN BRUNO BOULEVARD, SOUTH SAN FRANCISCO, CALIFORNIA 94080, (415) 266-1706. IN ORDER TO ENSURE TIMELY DELIVERY OF THE DOCUMENTS, ANY REQUEST SHOULD BE MADE BY JUNE 1, 1990.

Genentech does not do business in, and does not do business with any person or group located in, South Africa. This information is accurate only as of the date of this Proxy Statement. For updated information, stockholders may contact the Secretary of State of the State of California whose address and telephone number are: South Africa Business Notice, Office of the Secretary of State, 1230 J Street, Sacramento, California 95814, (916) 327-6427.

All information contained in this Proxy Statement concerning Roche and Roche Holding was provided by Roche. Genentech assumes no responsibility for the accuracy of such information.

INCORPORATION OF DOCUMENTS BY REFERENCE

The following documents previously filed with the Commission pursuant to the Exchange Act are hereby incorporated by reference in this Proxy Statement:

(a) Annual Report on Form 10-K of Genentech for the year ended December 31, 1989;

(b) Current Report on Form 8-K of Genentech dated February 15, 1990;

(c) Current Report on Form 8-K of Genentech dated April 30, 1990; and

(d) The description of Shares contained in Genentech's Registration Statement filed pursuant to the Exchange Act, and any amendment or report filed for the purpose of updating such description.

All documents filed by Genentech pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date hereof and prior to the Annual Meeting referred to herein shall be deemed to be incorporated by reference herein and to be a part hereof from the date of filing thereof. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Proxy Statement to the extent that a statement contained herein, or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of the Proxy Statement. If the Merger is consummated, Genentech will continue to be required to file periodic reports, proxy statements and other information with the Commission pursuant to the Exchange Act.

SUMMARY

The following is a brief summary of the more detailed information contained in this Proxy Statement with respect to the Merger discussed herein. This Summary is not intended to be complete and is qualified in its entirety by the more detailed information contained elsewhere in this Proxy Statement, the Annexes hereto and other documents referred to in this Proxy Statement. Terms used but not defined in this Summary have the meanings ascribed to them elsewhere in this Proxy Statement. Cross references in this Summary are to the captions of sections of this Proxy Statement.

Stockholders are urged to read this Proxy Statement and the Annexes hereto in their entirety.

The Companies

Genentech. Genentech is a leading biotechnology company focusing on the development, manufacture and marketing of human pharmaceuticals produced by recombinant DNA technology. Genentech was organized in 1976 as a California corporation, but changed its state of incorporation to Delaware in 1987. The principal executive offices of Genentech are located at 460 Point San Bruno Boulevard, South San Francisco, California 94080 and its telephone number at that address is (415) 266-1000.

Roche. Roche, a Delaware corporation, is the United States holding company for a group of health care companies and is a wholly-owned subsidiary of Roche Holding Ltd ("Roche Holding"), a Swiss corporation. Roche Holding is the parent company of a worldwide group of health care companies with operations in more than 100 countries. In 1989, Roche had sales of $2.2 billion, up 14% from the previous year, and Roche Holding and its subsidiaries had worldwide sales of 9.805 billion Swiss Francs ($6.6 billion, converted at a rate of one Swiss Franc = U.S. $0.668, as of March 30, 1990), up 21% from the previous year.

The Meeting

The Annual Meeting will be held on Friday, June 8, 1990 at 10:00 a.m., local time, at the Westin Hotel, One Old Bayshore Highway, Millbrae, California. At the Annual Meeting, Genentech stockholders will be asked to consider and vote upon the Merger Proposal.

If the Merger is consummated, each of Genentech's stockholders (other than stockholders who perfect their rights of appraisal under the Delaware General Corporation Law (the "Delaware Law") will be entitled to receive for each of their Shares: (i) $18.00 in cash, and (ii) one-half share of Redeemable Common Stock of Genentech. In the Merger, the shares of common stock of Merger Subsidiary will be converted into a number of Shares such that Roche will own approximately 60% of the equity of Genentech outstanding following the Merger, in exchange for which Roche will provide all the cash consideration to be received by stockholders in the Merger in exchange for their Shares and, in addition, will invest $491.5 million in cash (subject to adjustment as provided in the Merger Agreement) directly in Genentech. See "The Merger Agreement—Conversion and Exchange of Shares and Merger Subsidiary Common Stock," "—Surrender and Payment," and "—Additional Cash Consideration."

Shares with respect to which appraisal rights shall have been perfected will be converted in the Merger into the right to receive the amount to which the holder thereof is entitled upon appraisal. See "The Merger—Stockholders' Appraisal Rights."

Approval of the Merger Proposal by Genentech's stockholders will also constitute approval of (i) amendments to Genentech's Certificate of Incorporation to, among other things, authorize the issuance by Genentech of Redeemable Common Stock, and (ii) the treatment and disposition of outstanding options and rights under, and certain amendments to the 1984 Option Plans and the 1987 Plan contemplated by the Merger Agreement. See "Description of Amendments to the

Certificate of Incorporation" and "The Merger Agreement—Treatment of Stock Options and Stock Purchase Rights." In addition, at the Annual Meeting, Genentech's stockholders will be asked to elect four directors to the 1993 Class of the Board of Directors, to consider and vote upon adoption of Genentech's 1990 Stock Option/Stock Incentive Plan, and to ratify the Board of Directors' selection of Ernst & Young as Genentech's independent auditors.

Only holders of record of Shares at the close of business on April 12, 1990 (the "Record Date") will be entitled to vote at the Annual Meeting. At such date, there were outstanding and entitled to vote 84,959,698 Shares.

Required Vote

Each holder of record of Shares on the Record Date is entitled to one vote per Share on each matter to be considered at the Annual Meeting.

The presence, in person or by properly executed proxy, of the holders of a majority of the outstanding Shares entitled to vote at the Annual Meeting is necessary to constitute a quorum at the Annual Meeting. Under the Delaware Law, the affirmative vote of holders of Shares possessing a majority of the votes entitled to be cast at the Annual Meeting is required to approve the Merger Proposal. So long as a quorum is present in person or by properly executed proxy at the Annual Meeting, election of the four 1993 Class directors, ratification of the selection of Genentech's independent auditors and approval of the 1990 Stock Option/Stock Incentive Plan each require the affirmative vote of the holders of Shares representing a majority of the votes represented at the Annual Meeting.

As of the Record Date, directors and executive officers of Genentech and their affiliates owned beneficially an aggregate of 7,320,455 Shares (excluding shares which may be received upon exercise of options or warrants) or approximately 8.6% of the Shares outstanding on such date. Such persons are entitled to cast 7.5% of the votes entitled to be cast on the Merger. Each of the directors and executive officers has indicated to Genentech individually that all Shares owned by such person are intended to be voted for approval of the Merger Proposal.

Recommendation of the Board of Directors

The Board of Directors of Genentech has determined that the Merger is fair to and in the best interests of Genentech and its stockholders and unanimously recommends approval of the Merger Proposal to Genentech's stockholders. See "The Merger—Background of the Merger," "—Reasons for the Merger; Recommendation of the Board of Directors" and "—Interests of Certain Persons in the Merger." In addition, the Board of Directors unanimously recommends election of its nominees for election as directors, approval of the 1990 Stock Option/Stock Incentive Plan, and ratification of the selection of Ernst & Young as Genentech's independent auditors.

Effective Time and Conditions to the Merger; Termination

The Merger will become effective on the day that a Certificate of Merger is filed with the Secretary of State of Delaware pursuant to the Delaware Law (the "Effective Time"). It is currently expected that, if all conditions to the Merger have been met or waived, the filing will take place on the date of the Annual Meeting, or as soon thereafter as practicable. Stockholders should be aware, however, that the Effective Time may be delayed beyond the date of the Annual Meeting pending the expiration or termination of the waiting period requirement with respect to the Merger under the provisions of the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (the "HSR Act"). See "Certain Significant Considerations—Certain Legal Matters" and "The Merger Agreement—Conditions to Consummation of the Merger."

Stockholders should not send certificates representing their Shares to Genentech or the Exchange Agent for the Merger prior to receipt of a Letter of Transmittal that will be sent to stockholders following the Annual Meeting.

The obligations of Genentech, Roche and Merger Subsidiary to consummate the Merger are subject to certain conditions including, among others, the approval of the Merger Proposal by the stockholders of Genentech in accordance with the Delaware Law, the execution and delivery of the Governance Agreement by Roche and Genentech and the absence of any injunction or other legal prohibition to consummation of the Merger. See "The Merger Agreement—Conditions to the Consummation of the Merger," "—Certain Legal Matters" and "—Certain Litigation Relating to the Merger Agreement."

The Merger Agreement may be terminated at any time prior to the Effective Time (notwithstanding any approval of the Merger Proposal by the stockholders of Genentech): (i) by mutual written consent of Genentech and Roche, (ii) by either Genentech or Roche, if the Merger has not been consummated by September 1, 1990, (iii) by either Genentech or Roche, if there is any law, regulation or final order or decree that makes consummation of the Merger illegal or otherwise prohibited, (iv) by Genentech, if the Board of Directors of Genentech has withdrawn or materially modified its approval or recommendation of the Merger or the Merger Agreement, (v) by either Roche or Genentech, if the stockholders of Genentech fail to approve and adopt the Merger Proposal at the Annual Meeting, or (vi) by Roche, if it is not in material breach of its obligations under the Merger Agreement and if the Board of Directors of Genentech shall have (A) withdrawn its recommendation of the Merger Proposal or (B) recommended or approved acceptance by stockholders of any Acquisition Proposal (as defined in "The Merger Agreement—Covenants; Representations and Warranties") other than an Acquisition Proposal made by Roche or an affiliate of Roche.

The Merger Agreement provides that Genentech will pay Roche Holding a termination fee of $60 million (plus up to an additional $25 million as reimbursement for expenses actually incurred) if the Merger Agreement is terminated pursuant to the provisions described in clauses (v) or (vi)(A) above and, prior thereto, any person or group has made an Acquisition Proposal (other than an Acquisition Proposal that is an indication of interest that has not resulted in an offer or proposal) or become the beneficial owner of at least 30% of the outstanding Shares. Genentech will also pay such fees and expenses if the Merger Agreement is terminated pursuant to the provisions described in clauses (iv) or (vi)(B) above. See "The Merger Agreement—Termination; Amendments" and "—Expenses; Termination Fee." Such termination fee was required by Roche as a condition to its willingness to enter into the Merger Agreement. See "The Merger—Background of the Merger."

Redeemable Common Stock

Effective upon consummation of the Merger, the Certificate of Incorporation will be amended by operation of the Merger to, among other things, authorize the issuance of the Redeemable Common Stock. Shares of Redeemable Common Stock will be substantially identical to the Shares, except that shares of Redeemable Common Stock will be redeemable in whole at the option of Roche until June 30, 1995, and that holders of shares of Redeemable Common Stock will be entitled to receive a $.01 per share preferential distribution upon any liquidation, dissolution or winding up of Genentech. Subject to certain adjustments, the per share redemption price of the Redeemable Common Stock will be $38.00 per share until December 31, 1990, $39.00 per share if the shares are redeemed between January 1, 1991 and March 31, 1991, $40.00 per share if the shares are redeemed between April 1, 1991 and June 30, 1991 and thereafter will increase by $1.25 per share per quarter, up to $60.00 per share if the shares are redeemed between April 1, 1995 and June 30, 1995. If the Redeemable Common Stock has not been redeemed on or prior to June 30, 1995, each then outstanding share of Redeemable Common Stock will automatically be converted into one Share. See "Description of Redeemable Common Stock." The Board of Directors of Genentech has not assigned a specific value to the Redeemable Common Stock to be received by stockholders as a portion of the consideration in the Merger.

Opinions of Financial Advisors

Shearson Lehman Hutton Inc. ("Shearson Lehman") and Wasserstein Perella & Co., Inc. ("Wasserstein Perella") acted as financial advisors to Genentech in connection with its consideration of the Merger Agreement. Shearson Lehman and Wasserstein Perella each provided to the Board of Directors of Genentech written opinions, dated February 2, 1990, to the effect that, as of the date thereof, based on the considerations described in such opinions, the consideration to be received by the holders of Shares pursuant to the Merger Agreement is fair to such holders from a financial point of view. The full texts of the written opinions of Shearson Lehman and Wasserstein Perella, which set forth the assumptions made, the matters considered and the scope of reviews undertaken in connection therewith, are set forth in Annexes D and E to this Proxy Statement. See "The Merger—Opinions of Financial Advisors."

Stockholders' Appraisal Rights

Under the Delaware Law, any holder of record of Shares who votes against or abstains from voting in favor of the Merger and delivers a demand for appraisal prior to the vote of Genentech's stockholders on the Merger, has the right to obtain cash payment for the "fair value" of his or her Shares (excluding any element of value arising from the accomplishment or expectation of the Merger). In order to exercise such rights, a stockholder must comply with all the procedural requirements of Section 262 of the Delaware Law, a description of which is provided in "The Merger Agreement—Stockholders' Appraisal Rights" and the full text of which is attached as Annex B to this Proxy Statement. Section 262 should be read in its entirety. Such "fair value" would be determined in judicial proceedings, the result of which cannot be predicted. Failure to take any of the steps required under Section 262 in a timely manner will result in a loss of appraisal rights.

Market Prices

The Shares have been listed and traded on the NYSE under the symbol "GNE" since March 2, 1988, and on the Pacific Stock Exchange under the symbol "GNE" since April 12, 1988. The Shares were previously traded on the NASDAQ National Market System under the symbol "GENE." The following table sets forth certain information as to the quarterly high and low closing prices (or, for periods when the Shares were traded on the NASDAQ National Market System, the reported high and low bid quotations) of the Shares for the calendar quarters set forth.

	1989		1988		1987	
	High	Low	High	Low	High	Low
First Quarter	$21⅞	$16	$47½	$37½	$64¼	$42¾
Second Quarter	20¼	16¾	39¼	25⅛	57¾	36¼
Third Quarter.....	23¼	16¾	28	16½	49¾	37¼
Fourth Quarter	23⅜	18⅛	18¼	14⅜	51¾	28

On February 1, 1990, the last full trading day prior to the announcement that the Merger Agreement had been executed, the closing price per Share, as reported on the NYSE composite tape, was $21.75. On May 1, 1990, the last full trading day for which quotations were available at the time of printing of this Proxy Statement, the closing sale price per Share, as reported on the NYSE composite tape, was $25.25. The high and low closing prices of the Shares on the NYSE composite tape for the first quarter of 1990 were $29.875 and $20.375 respectively. The high and low closing prices of the shares on the NYSE composite tape for the second quarter of 1990 through May 1, were $26.50 and $25.25, respectively. STOCKHOLDERS ARE URGED TO OBTAIN CURRENT QUOTATIONS FOR THE SHARES.

No dividends have been paid on the Shares.

As of the Record Date, there were 27,331 holders of record of Shares.

Certain Federal Income Tax Consequences

Under the principles set forth in certain Internal Revenue Service rulings, part of each Share exchanged by a stockholder in the Merger will be considered to have been sold to Roche, and the remainder will be considered to have been exchanged in a "recapitalization" of Genentech within the meaning of Section 368(a)(1)(E) of the Internal Revenue Code of 1986, as amended (the "Code"). An exchanging stockholder will not recognize any gain or loss with respect to the portion of each Share considered to have been exchanged in the recapitalization for a share of Redeemable Common Stock. An exchanging stockholder will recognize gain or loss on the exchange of that portion of each Share considered to have been sold to Roche, measured by the difference between his or her basis in such portion of the Share and the amount of cash received. See "The Merger—Federal Income Tax Consequences."

Selected Historical Financial Data

The following table sets forth selected historical consolidated financial data for Genentech for each of the five years ended December 31, 1989. The selected historical consolidated financial data for Genentech for the five years shown below has been derived from the audited consolidated financial statements of Genentech. The historical data are not necessarily indicative of results to be expected after consummation of the Merger and should be read in conjunction with the consolidated financial statements and notes thereto of Genentech incorporated herein by reference.

GENENTECH
SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA
(In thousands, except per Share amounts)

	1989	1988	1987	1986	1985
Product sales	$319,067	$262,476	$141,416	$ 43,563	$ 5,182
Total revenues	400,455	334,840	230,543	133,954	89,599
Cost and expenses	352,929	311,732(1)	186,606	484,562 (2)	83,007
Net income (loss)	43,961	20,565(1)	42,230	(352,983)(2)	6,147
Net income (loss) per Share	.51	.24(1)	.50	(5.10)(2)	.10
Total assets	711,191	662,895	617,734	375,233	238,620
Long-term debt	154,409	155,269	168,078	31,577	5,999
Stockholders' equity	468,952	399,295	355,412	292,616	202,875
Weighted average number of Shares outstanding	85,967	84,459	84,418	69,268	64,026

(1) Costs and expenses in 1988 include a special charge which was primarily a reserve against inventory of $23.3 million, which amounted to $.26 per Share net of applicable income tax benefits.

(2) Costs and expenses in 1986 include a charge for the purchase of in-process research and development of $366.6 million, or $361.6 million after taxes. Income in 1986 after taxes and exclusive of this charge was $8.7 million ($.12 per Share).

Summary Unaudited Pro Forma Financial Information

The following table presents summary unaudited pro forma consolidated financial information of Genentech for the year ended December 31, 1989, giving retroactive effect to the sale of approximately 22 million newly issued Shares to Roche for $491.5 million in connection with the Merger, the conversion of 50% of the Shares outstanding at the Effective Time into Redeemable Common Stock and certain costs incurred in connection with the Merger, as if such transactions had occurred on January 1, 1989. For additional assumptions reflected in the following table, see "Unaudited Pro Forma Financial Information."

The summary unaudited pro forma consolidated financial information does not purport to represent what Genentech's financial position or results of operations actually would have been had the transactions described in the preceding paragraph in fact occurred on such date, or to project Genentech's financial position or results of operations for any future date or period.

The summary unaudited pro forma consolidated financial information should be read in conjunction with the 1989 consolidated financial statements of Genentech and the notes thereto incorporated by reference in this Proxy Statement. See "Incorporation of Documents by Reference" and "Unaudited Pro Forma Financial Information."

SUMMARY UNAUDITED PRO FORMA CONSOLIDATED FINANCIAL INFORMATION OF GENENTECH
(In thousands, except per share amounts)

	Year Ended December 31, 1989	
	Actual	Pro Forma
Income Statement Data:		
Total revenues	$400,455	$ 400,455
Net earnings	$ 43,961	$ 43,961
Earnings per share	$ .51	$ .39
Balance Sheet Data (at end of period):		
Total assets	$711,191	$1,090,233
Total liabilities	$242,239	$ 237,239
Stockholders' equity	$468,952	$ 852,994
Other Data (at end of period):		
Voting shares outstanding	84,269	111,700
Book value per share	$ 5.56	$ 7.64

The Merger Proposal

In considering the Merger Proposal, stockholders should be aware of certain factors regarding the Merger Proposal, which are set forth below and which are discussed in more detail elsewhere in this Proxy Statement.

Terms of the Transaction. In the Merger, each outstanding Share (other than Shares as to which appraisal rights have been perfected) will be converted into $18 in cash and one-half share of Redeemable Common Stock. All of the cash consideration to be received by holders of Shares pursuant to the Merger will be provided by Roche, and in addition Roche will invest $491.5 million in cash (subject to adjustment as described under "The Merger Agreement—Additional Cash Consideration") directly in Genentech at the time of the Merger, in exchange for which Roche will receive in the Merger Shares representing approximately 60% of the equity of Genentech following the Merger. See "The Merger Agreement."

As of the date of this Proxy Statement, approximately 85,000,000 Shares were outstanding. Based on the assumptions set forth below, Genentech's stockholders will receive in the Merger an aggregate of $1,608,472,800, which will be paid by Roche, and an aggregate of 44,679,800 shares of Redeemable Common Stock, and Roche will receive in the Merger an aggregate of 67,019,700 Shares. Thus, upon the consummation of the Merger, 111,699,500 shares of capital stock of Genentech are expected to be outstanding. Of the Shares to be received by Roche, 22,339,900 would be Shares issued to Roche in consideration for the investment by Roche of $491,500,000 directly in Genentech, and 44,679,800 would be Shares received by Roche as a result of the effective sale of Shares by Genentech's existing stockholders to Roche by way of the Merger. The foregoing calculations assume that all currently outstanding warrants to purchase Shares and certain stock purchase rights will be exercised prior to the consummation of the Merger, and that no employee stock options are exercised between the date of the Merger Agreement and the Effective Time. See "Unaudited Pro Forma Financial Information."

Genentech's Reasons for the Merger. The Merger Agreement represents the culmination of a process, initiated by the senior management and Board of Directors of Genentech in the summer of 1989, of exploring potential strategic alliances for Genentech with a view toward positioning Genentech for the future. The Board believes that the Merger provides a unique opportunity for Genentech that satisfies the objectives that the Board initially formulated with respect to its exploration of strategic alliances. The objectives included: (a) the realization of an immediate, above-market fair price to Genentech's stockholders with respect to a portion of their Shares, which would enable stockholders to realize immediately the potential value inherent in Genentech for a portion of their Shares while correspondingly limiting the downside of their investment in Genentech; (b) the preservation of a meaningful opportunity for stockholders to participate in Genentech's potential growth and success through a continuing equity interest in Genentech; (c) the receipt by Genentech of a significant equity capital investment that could be used by Genentech to maximize the potential of its ongoing research and development activities; (d) the preservation of Genentech's existing work environment, which the Board and senior management viewed as critical to Genentech's ability to retain the highly talented scientific and technical staff that is essential to Genentech's future; (e) the development of opportunities for synergistic relations between Genentech and a major participant in the global pharmaceutical industry, particularly with respect to the marketing of Genentech's products on a global basis, and (f) the potential acquisition of United States marketing rights by Genentech for one or more approved pharmaceutical products, which would generate additional revenues to fund ongoing research and development activities. See "The Merger—Background of the Merger" and "—Reasons for the Merger; Recommendation of the Board of Directors."

Advantages and Disadvantages of the Merger to Genentech Stockholders. Genentech's Board of Directors believes that the principal advantage of the Merger to Genentech's stockholders is that, through the conversion of each Share into $18 in cash and one half share of Redeemable Common Stock, stockholders will realize a substantial immediate return on their investment in Genentech and will at the same time have the opportunity to continue to participate in the long-term prospects of Genentech,

subject to Roche's right to cause the Redeemable Common Stock to be redeemed. In addition, the Board believes that Genentech's long term prospects will be significantly enhanced by Roche's investment in Genentech and by the potential for mutually advantageous business relationships between Genentech and Roche, and that stockholders will benefit from such enhanced prospects.

The Board believes that the principal disadvantage of the Merger to Genentech's stockholders is that, as a result of the redemption feature of the Redeemable Common Stock, were Genentech's future growth and/or market conditions to warrant a valuation of Genentech in excess of the redemption prices of the Redeemable Common Stock and were the Redeemable Common Stock to be redeemed, holders of the Redeemable Common Stock would participate in such increased valuation only to the extent of the applicable redemption price. See "Effect of the Redemption Feature of the Redeemable Common Stock" below.

For information with respect to the reasons for the Merger and the recommendation of the Board of Directors, see "The Merger—Background of the Merger" and "—Reasons for the Merger; Recommendation of the Board of Directors."

Effect of the Redemption Feature of the Redeemable Common Stock. In approving the Merger, Genentech's Board of Directors was aware that the ability of Roche to cause Genentech to effect a redemption of the Redeemable Common Stock could function as a limit on the potential value of stockholders' continuing investment in Genentech. At the same time, the Board also took into account the provisions of the Governance Agreement that, subject to a limited exception, restrict the ability of Roche to acquire the balance of the equity interest in Genentech from the public for a period of six years at less than the prices specified for redemption of the Redeemable Common Stock. In the Board's view, the prices of $38 to $60 per share specified for redemption of the Redeemable Common Stock are fair and attractive in the context of Genentech's business, prospects and risks, as well as in the context of Genentech's pre-announcement trading price of approximately $22 per Share. See "The Governance Agreement—Further Acquisitions of Securities of Genentech by Roche."

Composition of Genentech's Board of Directors following the Merger. The Governance Agreement provides that from the Effective Time until July 1, 1995, the Board of Directors of Genentech will include up to two nominees designated by Roche. After July 1, 1995, the Board will include up to two nominees designated by Roche and two officers of Genentech nominated by the nominating or proxy committee of the Board. The remainder of the Board will be comprised of Independent Directors (as defined under "The Governance Agreement—Further Acquisitions of Genentech by Roche"). Upon its request, after July 1, 1995, Roche will be entitled to designate nominees for a number of such Independent Directors equal to Roche Holding's proportionate voting interest in Genentech.

The Governance Agreement also provides that one of the directors to be designated by Roche will be a member of the nominating or proxy committee of Genentech's Board of Directors, which committee will have the exclusive authority to nominate as the Board's nominees individuals to fill all Board positions, except for those to be designated by Roche on and after July 1, 1995 pursuant to the Governance Agreement. With respect to any election of directors, any nomination by the proxy or nominating committee of a person other than an incumbent director will require the unanimous approval of such committee, except that the directors designated or nominated by Roche will not require such unanimous approval. Accordingly, Roche, through its designee, and the other members of such committee will each have effective veto power over the nomination of any director, other than incumbent directors and Roche's nominees. See "The Governance Agreement—Board of Directors."

Certain Rights of Roche following the Merger. The Governance Agreement provides that Roche will have effective veto power over certain extraordinary actions involving Genentech, including material acquisitions by Genentech, dispositions of all or any substantial portion of the business or assets of Genentech, issuances of equity securities by Genentech (subject to certain limitations and exceptions), and repurchases of equity securities by Genentech. The Governance Agreement also prohibits Genentech from entering into any material licensing or marketing agreement unless Genentech first negotiates in good faith with Roche with respect thereto for a period of not less than three nor more than six months. The foregoing rights of Roche would terminate upon the sale or transfer of any

Shares by Roche (other than a sale to a wholly owned subsidiary of Roche Holding). See "The Governance Agreement—Certain Approval Rights," "—Restrictions on Transfers of Common Stock by Roche" and "—Licensing and Marketing Agreements".

Roche's Reasons for the Merger. Roche believes that the Merger presents Roche with an opportunity to expand its investment in biotechnology through an affiliation with Genentech, a leading biotechnology enterprise. The Board of Directors of Roche considers the acquisition of 60% of the equity interest in Genentech in the Merger, together with the opportunity to acquire the remaining equity interest in Genentech at set prices prior to July 1, 1995, to be a worthwhile, long-term investment. Further, under the terms of the Governance Agreement, Roche has the right to enter into arms' length, exclusive negotiations with Genentech for a period of not less than three nor more than six months with a view toward entering into mutually beneficial licensing or marketing agreements with respect to any products, processes, inventions or developments of Genentech or any subsidiaries of Genentech. The Board of Directors of Roche believes that there is an opportunity to obtain substantial revenues from any such marketing agreements between Roche and Genentech.

Capacity of Roche. Roche Holding, which has guaranteed Roche's payment obligations under the Merger Agreement, had (together with its subsidiaries) approximately 8.2 billion Swiss Francs ($5.5 billion converted at a rate of one Swiss Franc = U.S. $0.668 as of March 30, 1990) in cash and marketable securities as of December 31, 1989. For further information concerning Roche and Roche Holding, including Roche's plans with respect to the financing of its payment obligations under the Merger Agreement, see "Roche and Roche Holding."

Interests of Certain Persons in the Merger. In the fall of 1989, the Board of Directors determined that certain strategic alternatives that it was then considering (see "The Merger—Background of the Merger") posed significant personal uncertainty as to certain individuals who were crucial to the evaluation and implementation of such alternatives. For this reason, in October 1989, Genentech entered into severance agreements with six senior officers of Genentech. Each such agreement provides that, if the covered officer's employment is terminated under certain circumstances within a specified period in connection with or following a Change in Control (as defined therein), the covered officer will become entitled to receive, among other things, a lump sum payment equal to five times such officer's annual compensation. The consummation of the Merger will constitute a Change in Control for purposes of such severance agreements. See "The Merger—Interests of Certain Persons in the Merger."

Pursuant to the Merger Agreement, outstanding options granted under the 1984 Option Plans (other than those held by non-employee directors) will, in connection with the Merger, be exchanged for options to purchase shares of Redeemable Common Stock, with appropriate adjustments to the exercise price and number of shares subject to such options so as to preserve the spread inherent in the options at the Effective Time. Options held by non-employee directors of Genentech will, pursuant to the Merger Agreement, be exchanged for options to purchase Redeemable Common Stock, but without adjustment to the exercise price or the number of shares subject to such options. The Merger Agreement also provides for certain adjustments to the 1987 Plan and the rights to purchase Shares granted thereunder, in accordance with the terms of the 1987 Plan, to preserve the aggregate discount with respect to the purchase of shares provided to participants in the 1987 Plan.

In lieu of the adjustments described above to options under the 1984 Option Plans, the Merger Agreement provides that holders of outstanding options (other than non-employee directors of Genentech) will be entitled to elect to have all of the vested portion and 25% of the unvested portion of each of their outstanding options cancelled at the time of the Merger in exchange for a cash amount equal to $36 less the per share exercise price of such option, multiplied by the number of Shares subject to such option. If such an election is made, the remaining unvested portion of each outstanding option (less that portion which is cancelled in exchange for cash) will be exchanged for an option to purchase shares of Redeemable Common Stock, without adjustment to the exercise price or the number of shares subject to such option. Depending on the extent to which an employees' options are vested, the making of such an election could result in an employee receiving a greater amount of cash in respect of his outstanding options than such employee would receive in respect of Shares issued upon exercise of such options, assuming such options were fully vested and exercised in full immediately prior to the Effective Time. See "The Merger—Interests of Certain Persons in the Merger."

The Merger Agreement provides for the making of certain amendments to the 1984 Option Plans and the 1987 Plan in connection with the Merger to provide for the treatment of such options and rights as described above and under "The Merger Agreement—Treatment of Stock Options and Stock Purchase Rights." Such amendments are subject to approval by the stockholders of Genentech. Because such amendments are an integral part of the Merger, the proposal to approve such amendments (and the treatment and disposition of options and rights contemplated by the Merger Agreement) and the proposal to approve the Merger Agreement are being submitted to Genentech's stockholders for their approval as a single proposal.

Certain Developments Regarding Genentech. Data from a major European clinical trial (the "GISSI-2 Study") directly comparing Actilyse, a t-PA which is equivalent to Activase® t-PA and which is marketed by a Genentech licensee, with streptokinase were released in March 1990. Activase t-PA is one of Genentech's two principal revenue generating products and accounted for approximately 50% of its revenues in 1989; streptokinase is a product of a competitor of Genentech and is significantly less expensive than Activase t-PA and Actilyse. The mortality data of the GISSI-2 Study indicated that both agents were equally effective in saving lives of heart attack victims. The safety data showed a statistically significant greater incidence of stroke in the group treated with Actilyse although there appeared to be no statistically significant difference in the hemorrhagic stroke rate between Actilyse and streptokinase. Additional statistically significant safety findings included fewer allergic reactions, lower incidence of major bleeds and less drug-induced hypotension for Actilyse as compared to streptokinase. The GISSI-2 Study did not use the adjuvant anti-coagulation treatment regimen that is favored by cardiologists using thrombolytic therapy in the United States, a fact which may affect applicability of the study's results to prevalent medical practice in the United States. The results of the GISSI-2 Study are expected to lead to a decrease in the share of Activase t-PA in the thrombolytic market and could have a negative impact on sales of Activase t-PA, although it is not currently known if such impact will be material. Although Roche's obligation to consummate the Merger is conditioned upon the absence of a material adverse change in the business, financial condition or results of operations of Genentech and its subsidiaries taken as a whole, the Merger Agreement provides that adverse results of any clinical trials and their impact on Genentech will not be considered a material adverse change or a basis therefor. See "The Merger Agreement—Conditions to Consummation of the Merger." Consequently, Genentech does not believe that the GISSI-2 Study will impact the consummation of the Merger.

Certain Legal Matters. Under the provisions of the HSR Act, the Merger may not be consummated until certain information has been furnished to the Justice Department and the Federal Trade Commission (the "FTC") and certain waiting period requirements of the HSR Act have been satisfied. Certain information was filed with the Justice Department and the FTC under the HSR Act by Genentech on February 26, 1990 and by Roche on February 23, 1990. On March 23, 1990, Genentech and Roche each received from the FTC requests for additional information with respect to the Merger. Under the HSR Act, the waiting period requirement with respect to the Merger will expire 20 calendar days following the substantial compliance by Genentech and Roche with such request for additional information, unless such waiting period is terminated earlier by the FTC. Neither Genentech nor Roche can currently predict when they will have substantially complied with such request for additional information. Consummation of the Merger is conditioned upon the expiration or termination of the applicable waiting period under the HSR Act relating to the Merger.

The 1990 Stock Option/Stock Incentive Plan

In considering the proposal to approve the 1990 Stock Option/Stock Incentive Plan (the "1990 Plan"), stockholders should be aware of certain factors regarding the 1990 Plan, which are set forth below and which are discussed in more detail elsewhere in this Proxy Statement.

Terms of the 1990 Plan; Grants of Options at Less than Fair Market Value. The 1990 Plan permits the granting of options intended to qualify as "incentive stock options" ("Incentive Options") within the meaning of Section 422A of the Code and the granting of options that do not so qualify ("Non-statutory Options"). In addition, the 1990 Plan permits the granting of stock appreciation rights in connection with Non-statutory Options or Incentive Options and the issuance of Shares, either fully

vested at the time of issuance or vesting according to a pre-determined schedule. An aggregate of 4,000,000 Shares are reserved for issuance under the 1990 Plan. See "Approval of the 1990 Stock Option/Stock Incentive Plan."

The exercise price of any Incentive Option granted under the 1990 Plan may not be less than 100% of the reported closing selling price per Share on the date of grant, while the exercise price of any Non-statutory Option granted under the 1990 Plan may not be less than 50% of the reported closing selling price per Share on the date of grant. If and to the extent that Non-statutory Options are granted at exercise prices of less than 100% of the reported closing selling price per Share on the date of grant, the employees receiving such options would obtain the benefit of an immediate gain if such options could be and were exercised on the date of grant. The actual gain, if any, realized by such employees in respect of such options will depend upon the market price of the Shares at the time such options are exercised.

Any Non-statutory Option granted under the 1990 Plan with an exercise price of less than the fair market value of the Shares on the date of grant will result in an accounting expense to Genentech equal to (x) the difference between the per Share exercise price of the option and the fair market value of a Share on the date of grant, multiplied by (y) the number of Shares subject to the option. Such expense would be deducted from Genentech's earnings in the quarter in which the grant of such option is made.

Impact of the Merger on the 1990 Plan. The 1990 Plan provides that, upon consummation of the Merger, all outstanding options granted under the 1990 Plan will become exercisable for shares of Redeemable Common Stock, without adjustment to the exercise price or number of shares subject to such options, and all references in the 1990 Plan to Shares will be deemed to be references to shares of Redeemable Common Stock. If the Redeemable Common Stock is redeemed, all outstanding options under the 1990 Plan will become fully vested and be cashed out on the redemption date at the excess of the per share redemption price over the per share option price. See "Approval of the 1990 Stock Option/Stock Incentive Plan—Special Merger Provisions."

Options Issued Subject to Adoption of the 1990 Plan. On February 1, 1990, the Board of Directors granted options under the 1990 Plan subject to adoption of the 1990 Plan by stockholders. Pursuant to such grant, all executive officers as a group (23 persons) were granted options with respect to an aggregate of 490,000 shares, and all employees (including officers) were granted options with respect to an aggregate of 2,281,000 shares. The exercise price for each of such options will be the fair market value of Redeemable Common Stock or Shares, as the case may be, 30 days after approval of the 1990 Plan by Genentech's stockholders. See "Approval of the 1990 Stock Option/Stock Incentive Plan—Options Issued Subject to Adoption of the 1990 Plan."

GENERAL INFORMATION

This Proxy Statement is furnished to stockholders of Genentech in connection with the solicitation of proxies by and on behalf of the Board of Directors of Genentech for use at the Annual Meeting to be held at 10:00 a.m., local time, on Friday, June 8, 1990, at the Westin Hotel, One Old Bayshore Highway, Millbrae, California, and any adjournment or postponement thereof. This Proxy Statement and the related form of proxy are first being mailed to stockholders of Genentech on or about May 2, 1990.

Purpose of Annual Meeting

At the Annual Meeting, the stockholders of Genentech will be asked (i) to consider and vote upon the Merger Proposal; (ii) to elect four Class of 1993 Directors each to serve for a term of three years; (iii) to approve the 1990 Stock Option/Stock Incentive Plan; and (iv) to ratify the selection of Ernst & Young as Genentech's independent auditors. Approval of the Merger Proposal will constitute approval of the Merger Agreement (including the amendments to the Certificate of Incorporation to be made pursuant thereto) and approval of the treatment and disposition of outstanding options and rights under, and certain amendments to the 1984 Option Plans and the 1987 Plan contemplated by the

Merger Agreement. If the Merger Proposal is approved, the size of Genentech's Board of Directors will be increased from 11 to 13 members, and two Roche nominees will be added to the Board. Information with respect to such persons is set forth under "Election of Directors."

Pursuant to the Merger Agreement, Merger Subsidiary will be merged with and into Genentech, with Genentech being the surviving corporation, and each Share then issued and outstanding (other than Shares as to which appraisal rights have been perfected) will be converted into the right to receive $18 in cash and one-half share of Redeemable Common Stock. In the Merger, the shares of common stock of Merger Subsidiary will be converted into a number of Shares such that Roche will own approximately 60% of the equity of Genentech outstanding following the Merger, in exchange for which Roche will provide all the cash consideration to be received by stockholders in the Merger in exchange for their Shares and, in addition, will pay to Genentech $491.5 million in cash (subject to adjustment as provided in the Merger Agreement). See "The Merger Agreement—Conversion and Exchange of Shares and Merger Subsidiary Common Stock," "—Surrender and Payment" and "—Additional Cash Consideration." Subject to the fulfillment or waiver of the other conditions of the Merger Agreement, the Merger is expected to become effective as soon as practicable following approval of the Merger Proposal by the stockholders of Genentech.

The Annual Meeting will also be held for the purpose of transacting such other business, if any, as may properly come before the Annual Meeting.

Record Date; Voting Rights; Proxies

The Board of Directors of Genentech has fixed the close of business on April 12, 1990 as the Record Date for determining holders of outstanding Shares entitled to notice of and to vote at the Annual Meeting. Only holders of Shares of record on the books of Genentech at the close of business on the Record Date will be entitled to notice of and to vote at the Annual Meeting or any adjournments or postponements thereof. As of the Record Date there were 84,959,698 Shares issued and outstanding, each of which entitles the holder thereof to one vote. All Shares represented by properly executed proxies will, unless such proxies have been previously revoked, be voted in accordance with the instructions indicated in such proxies. **If no instructions are indicated, such Shares will be voted (1) FOR approval of the Merger Proposal, (2) FOR the election of the Board's four nominees as directors of Genentech, (3) FOR approval of the 1990 Stock Option/Stock Incentive Plan, (4) FOR the ratification of the selection of Ernst & Young as Genentech's independent auditors and (5) in the discretion of the proxy holder as to any other matter which may properly come before the Annual Meeting.** Genentech does not know of any matters, other than as described in the Notice of Annual Meeting that are to come before the Annual Meeting. If any other matter or matters are properly presented for action at the Annual Meeting, the persons named in the enclosed form of proxy and acting thereunder will have the discretion to vote on such matters in accordance with their best judgment, unless such authorization is withheld. A stockholder who has given a proxy may revoke it at any time prior to its exercise by giving written notice thereof to the Secretary of Genentech, by signing and returning a later dated proxy, or by voting in person at the Annual Meeting; however, mere attendance at the Annual Meeting will not itself have the effect of revoking the proxy.

Solicitation of Proxies

Genentech will bear the cost of solicitation of proxies on behalf of Genentech's Board of Directors. In addition to soliciting proxies by mail, directors, officers and employees of Genentech, without receiving additional compensation therefor, may solicit proxies by telephone, by telegram or in person. Arrangements will also be made with brokerage firms and other custodians, nominees and fiduciaries for the forwarding of solicitation materials to the beneficial owners of Shares held of record by such persons, and Genentech will reimburse such brokerage firms, custodians, nominees and fiduciaries for reasonable out-of-pocket expenses incurred by them in connection therewith. Genentech has retained D. F. King & Co., Inc. to aid in the solicitation of proxies. It is estimated that the fee for such firm will not exceed $10,000 plus out-of-pocket costs and expenses.

Quorum

The presence in person or by properly executed proxy of holders of a majority of the outstanding Shares entitled to vote at the Annual Meeting is necessary to constitute a quorum at the Annual Meeting.

Required Vote

The approval of the Merger Proposal requires the affirmative vote of the holders of at least a majority of the outstanding Shares entitled to vote thereon. The election of directors, the ratification of the selection of Genentech's independent auditors and the approval of the 1990 Stock Option/Stock Incentive Plan each require the affirmative vote of the holders of a majority of the Shares represented at the Annual Meeting and entitled to vote on such matters, provided that a quorum is present. With respect to each of the above matters, each Share will be entitled to one vote.

As of the Record Date, 7,320,455 Shares (representing approximately 8.6% of the outstanding Shares) were beneficially owned by directors and executive officers of Genentech (excluding options and warrants to purchase Shares in the future). Each of the directors and executive officers has indicated to Genentech individually that all Shares owned by such persons are intended to be voted for approval of the Merger Proposal, for the election of the Board's nominees as directors of Genentech, for approval of the 1990 Stock Option/Stock Incentive Plan and for the ratification of the selection of Ernst & Young as Genentech's independent auditors.

THE MATTERS TO BE CONSIDERED AT THE ANNUAL MEETING ARE OF GREAT IMPORTANCE TO THE STOCKHOLDERS OF GENENTECH. ACCORDINGLY, STOCKHOLDERS ARE URGED TO READ AND CAREFULLY CONSIDER THE INFORMATION PRESENTED IN THIS PROXY STATEMENT, AND TO COMPLETE, DATE, SIGN AND PROMPTLY RETURN THE ENCLOSED PROXY IN THE ENCLOSED POSTAGE PAID ENVELOPE.

THE MERGER

Background of the Merger

During the summer of 1989, the senior management recommended and the Board of Directors of Genentech, with the assistance of senior management, commenced a thorough analysis of the status and direction of Genentech's business and of Genentech's role and prospects within the changing biotechnology and international pharmaceutical industries. This analysis focused on several factors, described below, which ultimately led the Board of Directors to make a strategic decision to investigate a possible alliance between Genentech and a major pharmaceutical company, as a means of maximizing Genentech's opportunities to fulfill its potential within the biotechnology industry and thereby enhance stockholder value. As described more fully below, this analysis led to the discussions and negotiations which resulted in the Merger Agreement approved by the Board of Directors on February 2, 1990.

In its analysis, the Board of Directors considered Genentech's present products and those under development. Genentech markets two products, Activase® t-PA and Protropin® human growth hormone, and has licensed two other major products, Humulin® human insulin and Roferon-A® alpha interferon, all of which currently generate revenues for Genentech. Genentech also has a significant number of potential products in various stages of research and development. The Board and management were aware, based on Genentech's own experience and the experience of the pharmaceutical industry generally, that the market introduction of any such potential products will depend upon the application of considerable technical and financial resources by Genentech, while the revenues that may be generated by such products, assuming they are successfully developed, could not be expected to be realized for several years. In this regard, the Board noted that during the first six months of 1989, Genentech spent approximately $76 million on its research and development activities, representing approximately 42% of its total product sales and contract revenues during such period.

The Board also assessed Genentech's ability to finance all of its new product development as an independent company and the consequences of doing so. The Board recognized a significant risk inherent in the continued funding of such extensive activities by means of internally generated financial resources. In particular, the period of time between the research and development of a potential product and its introduction in the market is considerable, and, more importantly, is subject to significant uncertainties as a result of both the nature of biotechnology and pharmaceutical research and development generally and the need for governmental approvals with respect to new pharmaceutical products. The Board was concerned that unless Genentech introduced products that are currently under development on schedule, the ongoing cost of research and development could reduce Genentech's short-term earnings to unacceptably low levels. Moreover, the Board concluded, after consultation with Genentech's financial advisors, that the capital markets could not be relied upon by Genentech as a source of large-scale long-term financing on acceptable terms.

On the other hand, the Board and management considered the desirability of restructuring Genentech's research and development activities to focus on a smaller number of potential new products, thereby curtailing Genentech's research and development activities with respect to other potential products and promising new opportunities. The Board ultimately concluded, however, that as compared to other alternatives that the Board believed to be available to Genentech, such a restructuring could seriously compromise the ability of Genentech to realize the long-term potential of its current leadership position in the biotechnology industry, and therefore would not be in the best interests of Genentech or its stockholders.

Contemporaneously with its review of the financing of Genentech's research and development activities, the Board also focused on certain profound changes in the nature of the pharmaceutical industry and the demands that such changes would likely put upon Genentech, particularly with respect to the industry's increasing consolidation and internationalization. The Board viewed such changes as resulting in large part from the growing cost and complexity of product development and regulatory compliance within the pharmaceutical industry (particularly in the United States), which in turn have heightened the importance of worldwide marketing capabilities to justify the incurrence of

such costs. The Board was also aware that the application of biotechnology to pharmaceuticals is increasingly being pursued by very-large, diversified pharmaceutical companies, which have begun to integrate biotechnology activities into their more traditional operations and product lines. In light of these factors, the Board and management concluded that Genentech would increasingly be competing with very large multinational pharmaceutical companies with extensive financial, technical and marketing resources and large, highly diversified product lines. The Board and management realized that, particularly given the need to devote substantial resources to its existing research and development activities, Genentech would not be assured that it could, on a timely basis, expand its product base or its marketing capabilities through internal growth to the extent necessary to meet fully the competitive challenges posed by the ongoing developments in the international pharmaceutical industry.

By the fall of 1989, the senior management recommended to the Board and the Board concluded that some form of strategic alliance with another entity in the pharmaceutical industry was likely to be the most effective means for Genentech to access additional financial resources to apply to its research and development activities and to meet the competitive challenges posed by developments in the international pharmaceutical industry. The Board concluded that such a strategic alliance could take various forms, including a merger or the sale of the entire company. The Board, based on the advice of its financial advisors, believed, however, that a transaction involving a portion of the equity of Genentech was most likely to elicit values for stockholders reflecting Genentech's future potential. For such a strategic alliance, the Board formulated several objectives. These objectives included generally (a) the realization of an immediate, above-market fair price to Genentech's stockholders with respect to a portion of their Shares, which would enable stockholders to realize immediately the potential value inherent in Genentech for a portion of their Shares while correspondingly limiting the downside of their investment in Genentech; (b) the preservation of a meaningful opportunity for stockholders to participate in Genentech's potential growth and success through a continuing equity interest in Genentech; (c) the receipt by Genentech of a significant equity capital investment that could be used by Genentech to maximize the potential of its ongoing research and development activities; (d) the preservation of Genentech's existing work environment, which the Board and senior management viewed as critical to Genentech's ability to retain the highly talented technical staff that is essential to Genentech's future; (e) the development of opportunities for synergistic relations between Genentech and a major participant in the global pharmaceutical industry, particularly with respect to the marketing of Genentech's products on a global basis, and (f) the potential acquisition of United States marketing rights by Genentech for one or more approved pharmaceutical products, which would generate additional revenues to fund ongoing research and development activities. At the time such objectives were developed, Genentech asked Shearson Lehman and Wasserstein Perella to assist Genentech in exploring possible strategic alliances. With respect to criteria for evaluating potential candidates for such a strategic alliance with Genentech, it was determined that the most appropriate candidates would be very large, broad-based multinational pharmaceutical companies with an understanding of and commitment to biotechnology and with significant international marketing capabilities that could be made available to Genentech to increase its access to overseas markets, and with sufficient financial resources to devote substantial capital to Genentech without requiring a short-term return.

The Board was aware that its exploration of a potential strategic alliance posed certain risks for Genentech. In particular, the Board believed that disclosure of such exploration in the absence of a specific and fully developed proposed transaction could lead to an environment of uncertainty and anxiety within Genentech, which in turn could result in the departure of Genentech employees, particularly members of its highly talented scientific staff—a key asset. The Board believed that the possibility of such a development would be an unacceptable risk for Genentech in that it would seriously impair the ability of Genentech to fulfill its potential, and would consequently reduce Genentech's attractiveness as a strategic partner and impair many of the benefits that could be realized by Genentech and its stockholders through a strategic alliance. In light of such concerns, the Board concluded that strict confidentiality should be maintained with respect to its exploration of strategic alliances.

Commencing in late September 1989, through its financial advisors and members of its senior management, Genentech approached major multinational pharmaceutical companies to determine whether such companies would be interested in and appropriate for a strategic alliance with Genentech.

Genentech and its financial advisors did not, however, contact those companies that the financial advisors believed would not have the financial capability or willingness to invest in Genentech on a basis that would be attractive to Genentech and its stockholders. In this regard, it was recognized that a company that entered into a strategic alliance with Genentech at the valuation levels being sought by the Board would have to be willing to wait at least several years for a return on its investment. Genentech and its financial advisors therefore did not contact companies that they believed, based on their experience and professional judgment, would not be willing to invest on such basis or accommodate the financial impact thereof. In certain cases where a company approached by the financial advisors indicated that it would not have an interest in a transaction with an entity having characteristics comparable to those of Genentech, the financial advisors did not disclose to such company the identity of Genentech as the subject of their contact. In other cases, potential candidates were provided confidential information concerning Genentech and, in certain cases, met with members of Genentech's management. Each candidate that received confidential information entered into a confidentiality agreement with Genentech, which provided, among other things, that all non-public information provided to such candidate would be kept confidential and that, for a period of years, such candidate would not, without the prior consent of Genentech, acquire any securities or assets of Genentech or otherwise seek to influence the management or policies of Genentech. The Board did not direct Genentech's financial advisors or senior management to approach entities outside of the pharmaceutical industry concerning a potential transaction with Genentech, because in the view of the Board and the financial advisors the possibility that any such transaction would be proposed on terms more attractive was extremely remote. None of the companies contacted by or on behalf of Genentech expressed an interest in acquiring the entire equity interest in Genentech.

Roche Holding, the parent of Roche, was one of the candidates approached by Genentech's financial advisors during the course of their general solicitation of potential candidates for a strategic alliance with Genentech. Roche Holding entered into a confidentiality agreement with Genentech on October 13, 1989 and thereafter Roche Holding was provided with certain confidential information concerning Genentech. In late October 1989, Mr. Robert Swanson, then the Chief Executive Officer of Genentech, Mr. G. Kirk Raab, then the Chief Operating Officer of Genentech, and Mr. Frederick Frank of Shearson Lehman, met with Mr. Fritz Gerber, Chairman, and Dr. Henri Meier, Chief Financial Officer, of Roche Holding, to discuss Genentech's research and development activities, the potential benefit to both companies of a strategic alliance, and Roche Holding's interest in such a transaction. Roche Holding then analyzed certain aspects of the business of Genentech with particular emphasis on its research and development activities and its potential new products. In late November 1989, Mr. James M. Gower, Senior Vice President in charge of Sales and Marketing of Genentech, met with senior marketing executives of Roche Holding to discuss such potential new products. In addition, Mr. Jürgen Drews, the Director of Research of Roche Holding, met with a number of Genentech's officers and scientists to review the current research and development activities of Genentech. In early December 1989, Mr. Swanson and Mr. Raab met again with Mr. Gerber and four senior executives of Roche Holding to review the results of the Roche investigation and to discuss the basis on which a strategic alliance could be implemented, and in mid-December 1989, Mr. Raab met with Dr. Armin Kessler, the Chief Operating Officer of Roche Holding, to discuss Genentech's business prospects. Also during this period, a series of meetings were held, both in the United States and in Switzerland, between Shearson Lehman, acting on behalf of Genentech, and representatives of Roche Holding, including Morgan Guaranty Trust Company of New York, its financial advisor. During the course of the above meetings, Genentech was advised that Roche Holding was not interested in a transaction in which it would be obligated to buy all the Shares.

As a result of the meetings held in December 1989, and the meetings with Shearson Lehman, a proposal was developed providing for an acquisition by Roche of 50% of the outstanding Shares for cash, an acquisition by Roche directly from Genentech of additional Shares for cash such that Roche would own approximately 60% of the outstanding equity of Genentech after giving effect to such transaction, and the establishment of a mechanism that would permit Roche, at its option and subject to certain restrictions, to acquire the remaining equity held by the public at some time in the future. Under Roche's proposal, Genentech would remain a public company unless the remaining equity was

acquired. Roche's proposal would also present the opportunity for the coordination of certain marketing arrangements and other commercial relationships between Roche and Genentech. As part of its proposal, Roche insisted on receiving an option to purchase from Genentech authorized but unissued Shares representing approximately 20% of the outstanding Shares, and on an agreement that Genentech pay Roche substantial termination fees in the event that the proposed transaction were not consummated. Genentech's management and financial advisors resisted Roche's request for an option and substantial termination fees, while continuing to negotiate Roche's proposal.

In January 1990, representatives of Genentech and Roche conducted intensive negotiations concerning all aspects of the proposal, which negotiations ultimately resulted in the Merger Agreement. At this time, Roche continued to insist upon its receipt of an option on unissued Shares and substantial termination fees. In addition, Roche requested a proxy from certain of Genentech's principal stockholders who were also directors of Genentech with respect to any stockholder vote on its proposed transaction or any alternative transaction, and an arrangement whereby Roche would have a right of first refusal upon any shares disposed of by such stockholders following consummation of the transaction. Genentech resisted this request, and continued to resist Roche's requests with respect to a stock option and termination fees. Roche's proposal was presented to and considered by the Board at a meeting held on February 1, 1990. As presented to the Board, such proposal contemplated a transaction, structured as a merger, whereby Roche would, in effect, purchase 50% of the outstanding Shares for $36 per Share in cash, and purchase approximately 22 million additional Shares from Genentech at approximately $22 per Share for an aggregate price of approximately $491.5 million cash so that Roche would own approximately 60% of the outstanding equity of Genentech after giving effect to such transaction. In addition, Roche would, for a five-year period, be able to cause Genentech to redeem the remaining equity held by the public at specified prices increasing from $38 per share to $60 per share over the five-year period.

Roche's proposal continued to contemplate Roche's receiving an option from Genentech on unissued Shares, substantial termination fees and the arrangements described above between Roche and certain principal stockholders of Genentech. Following extensive consideration, including presentations by Shearson Lehman and Wasserstein Perella, the Board concluded that it could endorse the Merger Proposal, provided that Roche eliminated or substantially modified its requirements of an option on unissued Shares, termination fees, and the proposed arrangements with certain principal stockholders. Following negotiations held after the adjournment of the February 1 meeting of the Board, Roche revised its proposal to eliminate the option on unissued Shares from Genentech and the principal stockholder arrangements, but it continued to insist on a termination fee and expense reimbursement arrangement as a condition of proceeding. The Board of Directors reconvened on February 2, 1990, during which it considered the revisions to Roche's proposal and, in addition, received the opinions of Shearson Lehman and Wasserstein Perella with respect to the fairness from a financial point of view of the consideration to be received by the holders of Shares pursuant to the Merger Agreement. See "Opinions of Financial Advisors." At the conclusion of such meeting, the Board approved the Merger Agreement and determined to recommend that the stockholders vote for the approval and adoption of the Merger Agreement. Immediately thereafter, the Merger Agreement was executed by the parties thereto, and Roche and Genentech jointly announced the transaction.

Reasons for the Merger;
Recommendation of the Board of Directors

By unanimous vote of the Directors present at the February 2, 1990 meeting, the Board of Directors of Genentech approved the Merger Agreement and the transactions contemplated thereby, and determined that such transactions are fair to and in the best interests of Genentech and its stockholders. The two Directors who were not present on February 2, 1990 have affirmed their approval of the Merger Agreement and the transactions contemplated thereby. Each member of the Board of Directors has indicated that he intends to vote all Shares that he owns in favor of the Merger Proposal. **The Board of Directors unanimously recommends that stockholders vote for approval of the Merger Proposal.**

The Board believes that the Merger provides a unique opportunity for Genentech and that it satisfies the objectives that the Board had initially formulated with respect to its exploration of strategic alliances. See "Background of the Merger."

First, the Board believes that the $18 per Share in cash to be received by stockholders pursuant to the Merger in respect of each of their Shares allows stockholders to realize an immediate return on their investment in Genentech at a fair price and thereby limits the downside risk faced by stockholders in continuing to hold Genentech's stock. The Merger Proposal represents an $18 per Share cash payout against an approximately $22 per Share pre-announcement trading price and permits stockholders to retain one-half of their equity interest in Genentech in the form of the Redeemable Common Stock. In this regard, the Board views the Merger as, in effect, a means for stockholders to sell half of their Shares for $36 per Share in cash. The Board also took into account, however, that no assurances can be given that the value of the equity interest in Genentech retained by stockholders following the Merger will equal the consideration received by stockholders in respect of the portion of their equity interest in Genentech which is in effect sold by them in the Merger, and also took into account that the voting power of Genetech's existing stockholders will, as a result of the acquisition of 60% of the equity of Genentech by Roche in the Merger, be reduced to less than half of that currently held by Genentech's existing stockholders.

Second, the Board considers it important that the current stockholders will have the opportunity to continue to participate in the long-term prospects of Genentech following the Merger. As indicated below, the Board believes that such prospects will be significantly enhanced as a result of the Merger and Roche's direct equity investment in Genentech. The Board took into account that the proposed amendments to the Certificate of Incorporation to be made pursuant to the Merger as well as the Governance Agreement were designed to protect the interests of minority stockholders following the Merger. The Board was aware that the ability of Roche to effect a redemption of the Redeemable Common Stock could function as a limit on the potential value of stockholders' continuing investment in Genentech. At the same time, the Board also took into account the provisions of the Governance Agreement that, subject to a limited exception, restrict the ability of Roche to acquire the balance of the equity interest in Genentech from the public for a period of six years at less than the prices specified for redemption of the Redeemable Common Stock. See "The Governance Agreement—Further Acquisitions of Securities of Genentech by Roche." In the Board's view, the prices of $38 to $60 per share specified for redemption of the Redeemable Common Stock are fair and attractive in the context of Genentech's business, prospects and risks, as well as in the context of Genentech's pre-announcement trading price of approximately $22 per Share.

Third, the Merger will result in an immediate capital investment in Genentech of approximately $491.5 million. (For a description of the formulas that specify the exact amount of Roche's additional equity investment and the exact number of Shares Roche will acquire as a result of the Merger, see "The Merger Agreement—Conversion and Exchange of Shares and Merger Subsidiary Common Stock" and "—Additional Cash Consideration.") The Board believes that this investment, even after taking into account the approximately $150 million in merger related costs to be incurred by Genentech, will significantly enhance the ability of Genentech to continue to pursue its ongoing research and development activities while significantly reducing the financial risks and pressures inherent in such activities. In particular, the Board believes that without such capital investment Genentech would face the risk that its internally generated financial resources could be insufficient to fund such research and development activities, and that as a result Genentech would be forced to cut back on such activities. The Board believes the reduction of such risks will better enable Genentech to fulfill its long-term potential and will thereby result in significant benefits both for Genentech and, with respect to their continuing equity interest in Genentech, its stockholders. The $150 million in merger related costs referred to above, which includes approximately $115 million of costs associated with the treatment in the Merger of outstanding options under the 1984 Option Plans, is described under "Unaudited Pro Forma Financial Information."

Fourth, the Board believes that the arrangements provided by the Governance Agreement, as well as Roche's expressed desire that Genentech maintain its culture, independence and entrepreneurial

spirit, will enable the management of Genentech to preserve and continue Genentech's unique work environment, a factor that both the Board and management believe will be critical to Genentech's ability to realize its long-term potential and thus serve the interests of its stockholders.

Fifth, the affiliation of Genentech with Roche that will result from the Merger could provide access to Roche Holding's worldwide marketing and distribution resources, and thereby better enable Genentech to penetrate potential markets and, more generally, to respond to the competitive challenges posed by current and anticipated developments in the pharmaceutical industry. The Board recognized that any such future arrangements would have to be negotiated on an arm's length basis and that there could be no assurance that such arrangements would be concluded.

Sixth, the affiliation of Genentech with Roche that will result from the Merger could provide Genentech with marketing rights in the United States for one or more products of Roche and its affiliates, and the Board believes that the potential revenues generated by such marketing rights would enhance the financial resources available to Genentech for its ongoing research and thereby reduce the risks inherent in such activities and better enable Genentech to fulfill its long-term potential. The Board recognized that any such future arrangements would have to be negotiated on an arm's length basis and that there could be no assurance that such arrangements would be concluded.

The Board also considered the results of the approaches made by Genentech and its financial advisors to other potential candidates for a strategic alliance. Finally, the Board also considered the opinions of each of Shearson Lehman and Wasserstein Perella that the consideration to be received by the holders of Shares pursuant to the Merger Agreement is fair from a financial point of view to such holders. See "Opinions of Financial Advisors."

In view of the variety of factors considered by the Board in connection with its evaluation of the Merger Agreement, the Board did not find it practicable to and did not quantify or otherwise assign relative weights to the specific factors considered in reaching its determination.

Opinions of Financial Advisors

Shearson Lehman and Wasserstein Perella have acted as financial advisors to Genentech in connection with its exploration of strategic alternatives described under "Background of the Merger," which resulted in the Merger Agreement and assisted Genentech in the negotiations with respect to the Merger Agreement and the consideration offered pursuant thereto and the Governance Agreement. Genentech retained Shearson Lehman and Wasserstein Perella based upon their experience and expertise, including their experience with global strategic alliances within the pharmaceutical industry.

In connection with the Board of Directors' consideration of the Merger Agreement, Shearson Lehman and Wasserstein Perella each provided the directors of Genentech with its oral opinion, subsequently confirmed in written opinions dated February 2, 1990, to the effect that, as of the date thereof, based upon the considerations described in the opinions, the consideration to be received by the holders of Shares pursuant to the Merger Agreement is fair to such holders from a financial point of view.

In connection with its opinion, Shearson Lehman reviewed, among other things, the Merger Agreement, the Governance Agreement, certain internal financial analyses, forecasts and other information regarding Genentech prepared by its management and held discussions with members of senior management of Genentech concerning the historical and current operations, financial condition and the future prospects of Genentech. Shearson Lehman also reviewed the publicly available and other financial information of Genentech, including annual and interim reports to stockholders as filed with the Commission over the past five years. Shearson Lehman's review also included consideration of: (i) the terms of the Merger and a comparison of those terms with the terms of certain other transactions which it deemed relevant; (ii) the business, operations and prospects of Genentech as described in the aforementioned information reviewed by Shearson Lehman and as described by its management; (iii) the price and trading histories of the Shares and a comparison of those price and trading histories with those of other companies which Shearson Lehman deemed comparable; (iv) a comparison of the financial position and operating results of Genentech with those of publicly traded companies which

Shearson Lehman deemed comparable; (v) valuation analyses of the Shares; (vi) analyses of the potential pro forma financial effects of the Merger; and (vii) such other financial studies, analyses, investigations and other factors as Shearson Lehman deemed necessary or appropriate for purposes of its opinion.

Shearson Lehman assumed and relied upon, without independent verification, the accuracy and completeness of all of the financial and other information that it reviewed in connection with its opinion. With respect to the financial forecasts and projections, Shearson Lehman assumed that they were reasonably prepared on bases reflecting the best currently available estimates and judgments of Genentech's management as to its expected future financial performance. Shearson Lehman did not obtain any independent appraisals or conduct physical inspections of the properties, assets or liabilities of Genentech.

In arriving at its opinion, Wasserstein Perella reviewed, among other things, the Merger Agreement, the Governance Agreement, and the text of the amendments to the Certificate of Incorporation of Genentech relating to the Redeemable Common Stock. Wasserstein Perella also reviewed certain publicly available business and financial information relating to Genentech and certain other information, including financial forecasts, provided to Wasserstein Perella by Genentech and met with senior management of Genentech to discuss such information.

Wasserstein Perella did not independently verify any of the foregoing information and relied on its being complete and accurate in all material respects. With respect to the financial forecasts, Wasserstein Perella assumed that they reflected the best currently available estimates and judgments of the future financial performance of Genentech, in light of the assumptions on which they were based. Wasserstein Perella did not make an independent evaluation or appraisal of the assets of Genentech nor was it furnished with any such appraisals.

Wasserstein Perella also considered, among other matters it deemed relevant, certain financial and stock market data of Genentech and compared that information, from a financial point of view, to similar data for other publicly held companies in businesses similar to those of Genentech and considered the financial terms of other business combinations which had recently been effected.

In rendering their opinions, each of Shearson Lehman and Wasserstein Perella assumed, with Genentech's consent, that the terms of the Redeemable Common Stock will not cause holders of the Redeemable Common Stock to be deemed to receive stock dividends taxable under Section 305 of the Code. See "Federal Income Tax Consequences."

The full text of the written opinions of Shearson Lehman and Wasserstein Perella, which set forth the assumptions made, the matters considered and the scope of the reviews undertaken in connection therewith, are set forth in Annexes D and E, respectively, and should be read carefully in their entirety.

Pursuant to engagement letters between Genentech and each of Shearson Lehman and Wasserstein Perella, Shearson Lehman and Wasserstein Perella will receive fees of $14 million and $7 million, respectively, contingent upon consummation of the Merger. Such fees will be reduced by certain amounts previously paid by Genentech to Shearson Lehman and Wasserstein Perella, including the amounts of $2 million and $1 million, respectively (which amounts were negotiated after February 2, 1990), which became due upon the delivery of the opinions rendered by each at the February 2, 1990 Board meeting. Shearson Lehman and Wasserstein Perella will be entitled to additional fees of $3 million and $1.5 million, respectively, if Genentech effects the redemption of the Redeemable Common Stock. Genentech has also agreed to reimburse Shearson Lehman and Wasserstein Perella for their reasonable out-of-pocket fees and expenses, and to indemnify them against certain expenses and liabilities in connection with their services as financial advisors, including those arising under the federal securities laws.

In August 1989, Wasserstein Perella entered into an agreement with Genentech under which Wasserstein Perella agreed to act as a financial advisor to the Board of Directors of Genentech regarding its long-term financial strategy. Wasserstein Perella agreed to serve as a non-exclusive advisor with respect to any merger, acquisition and divestiture activity Genentech would undertake. Under this agreement, Genentech pays Wasserstein Perella a fee of $200,000 per year in quarterly installments,

which fee is to be credited against any fee for financial advisory services in connection with any actual or proposed transaction arising from the engagement of Wasserstein Perella. The agreement has an indefinite term, but may be terminated by Genentech at any time upon written notice to Wasserstein Perella. In connection with this engagement, Genentech also entered into a customary indemnification agreement with Wasserstein Perella, which provides, among other things, for indemnification with respect to liabilities arising under the federal securities laws.

Pursuant to an engagement letter dated July 20, 1989, Shearson Lehman was engaged by Genentech and Genencor Inc. ("Genencor"), a company 25% of the capital (excluding stock issuable to Genencor employees) of which was then owned by Genentech, to advise Genentech and Genencor concerning opportunities for the sale of the stock of Genencor. A sale of Genentech's interest in Genencor to Allens Creek Enterprises, Ltd., a joint venture of Eastman Kodak Company and Cultor Ltd., was completed on March 23, 1990. In connection with such sale and the private placement of a note forming part of the proceeds of such sale, Shearson Lehman was paid fees in the amount of approximately $720,000.

In February 1989, Frederick Frank was retained by Genentech to serve as a consultant on business and finance matters, for which he is paid $3,333.33 per month. Mr. Frank is a managing director of Shearson Lehman. In such capacity, Mr. Frank was one of the principal advisors to Genentech in connection with the negotiations that led to the Merger Agreement.

Except as described above, no material relationship existed during the past two years between Genentech and its affiliates and either Shearson Lehman and its affiliates or Wasserstein Perella and its affiliates.

Roche's Reasons for the Merger

Roche believes that the Merger presents Roche with an opportunity to expand its investment in biotechnology through an affiliation with Genentech, a leading biotechnology enterprise. The Board of Directors of Roche considers the acquisition of 60% of the equity interest in Genentech in the Merger, together with the opportunity to acquire the remaining equity interest in Genentech at set prices prior to July 1, 1995, to be a worthwhile, long-term investment. Further, under the terms of the Governance Agreement, Roche has the right to enter into arms-length, exclusive negotiations with Genentech for a period of not less than three nor more than six months with a view toward entering into mutually beneficial licensing or marketing agreements with respect to any products, processes, inventions or developments of Genentech or any subsidiaries of Genentech. The Board of Directors of Roche believes that there is an opportunity to obtain substantial revenues in the event that Roche and Genentech are able to negotiate successfully such marketing or licensing arrangements.

Interests of Certain Persons in the Merger

Directors and Officers. Pursuant to the Merger Agreement, the directors of Genentech immediately prior to the Effective Time, along with up to two individuals designated by Roche, will be the initial Board of Directors of Genentech immediately following the consummation of the Merger. Genentech has agreed that as of the Effective Time it will increase the size of the Board of Directors by up to two and will elect or cause to be elected to its Board of Directors Roche's designees. For information on such designees, see "Election of Directors—Nominees." There will be no immediate change in Genentech's officers as a result of the Merger.

The Governance Agreement provides that in any election of directors, Roche will vote its Shares and shares of Redeemable Common Stock for all nominees in proportion to the votes cast by the other holders of Redeemable Common Stock (excluding, at Roche's option, any votes cast by any person that beneficially owns at least 12% of the Equity Securities (as defined below under "The Governance Agreement—Further Acquisitions of Securities by Roche") not beneficially owned by Roche Holding); provided that it may cast all of its votes in favor of any nominee designated by it pursuant to the Governance Agreement. See "The Governance Agreement—Certain Agreements of Roche as to Voting." The Governance Agreement also provides that one of the directors to be designated by

Roche will be a member of the nominating or proxy committee of Genentech's Board of Directors, which committee will have the exclusive authority to nominate individuals as the Board's nominees to fill all Board positions, except for those to be designated by Roche on and after July 1, 1995 pursuant to the Governance Agreement. With respect to any election of directors, any nomination of a person other than a then incumbent director or a director designated or nominated by Roche will require the unanimous approval of such nominating or proxy committee. See "The Governance Agreement—Board of Directors."

Ownership of Shares by Officers and Directors. For information as to Shares and securities exercisable for or convertible into Shares owned by officers and directors of Genentech, see "Election of Directors—Security Ownership of Management."

Treatment of Employee Stock Options. Almost all of the employees of Genentech, including all but one of its directors and officers, have been granted stock options under the 1984 Option Plans ("Employee Stock Options"). See "Election of Directors—Stock Option Plans." The 1984 Option Plans provide that from and after a "change of control" of Genentech, Employee Stock Options not then exercisable would be accelerated and become exercisable in full, unless the Board of Directors determines that it is "clearly in the best interest of the optionholders and the shareholders taken together that [Genentech] or a surviving corporation (if the change of control results in [Genentech] not surviving) assume any outstanding options or substitute similar options for those outstanding under the Plan, in which case the Board may take appropriate action to effect an assumption or substitution." Another provision of both of the 1984 Option Plans requires adjustment in the terms of options in the event of a merger involving Genentech. While the Merger constitutes a "change of control" as defined in the 1984 Option Plans, Roche advised Genentech that it would not be willing to proceed with the Merger if all Employee Stock Options were accelerated. The Board has determined, after consideration of the Merger and the terms of the 1984 Option Plans, that it is clearly in the best interests of the holders of Employee Stock Options and stockholders taken together that Genentech proceed with the Merger and, accordingly, determined not to accelerate the vesting of all unvested options and instead, to provide that Adjusted Options would be substituted for outstanding Employee Stock Options at the Effective Time, while providing an opportunity for a partial acceleration through a "Cash-Out Election" as described below. The Adjusted Options are options to purchase shares of Redeemable Common Stock, and preserve the spread inherent in the Employee Stock Options at the Effective Time. See "The Merger Agreement—Treatment of Stock Options and Stock Purchase Rights" for a description of the terms of the Adjusted Options. The Adjusted Options do not involve the acceleration of any vesting requirements or the cash out of existing options.

At the same time, the Board decided to provide holders of Employee Stock Options with the alternative opportunity to receive cash for a portion of such Options in lieu of the Adjusted Options. Accordingly, the Merger Agreement provides that prior to the Effective Time, each holder of an Employee Stock Option will be provided an opportunity to make a "Cash-Out Election" with respect to all options held by such holder. Pursuant to the Cash-Out Election, each Employee Stock Option that is not then fully vested will become vested with respect to 25% of the unvested portion thereof (such accelerated vesting to be credited against the next regularly scheduled vestings of such Employee Stock Option). The then unexercised vested portion of each Employee Stock Option (consisting of the previously vested portion plus such 25%), if any, will be cancelled, and Genentech will pay to the holder thereof an amount in cash equal to $36 less the applicable per share exercise price of such option, multiplied by the number of Shares such holder could have purchased with such vested portion had the holder exercised such portion in full immediately prior to the Effective Time. Immediately following the Effective Time, the unvested portion of each Employee Stock Option subject to a Cash-Out Election will be cancelled, and the holder thereof will receive, in exchange therefor, a substitute option to purchase shares of Redeemable Common Stock, without any adjustment to the exercise price or number of shares subject to such unvested portion of such option. Such substitute options will also be subject to the same terms and conditions as were applicable immediately prior to the Effective Time to the Employee Stock Option for which it is exchanged, including conditions relating to exercise and the terms related to vesting (treating such substitute options as if they were granted at the same time as the options for which they were exchanged). Because of the acceleration

of vesting with respect to 25% of the unvested portion of Employee Stock Options of optionees making a Cash-Out Election, there will be a period of time following the Effective Time when no additional shares vest under each Employee Stock Option of such optionees. See "The Merger Agreement—Treatment of Stock Options and Stock Purchase Rights."

Pursuant to the Merger Agreement, the directors of Genentech who are not employees of Genentech will not be entitled to receive Adjusted Options or make a Cash-Out Election and, instead, following the Merger the Employee Stock Options held by such persons will continue unchanged, except that they will become options to buy Redeemable Common Stock in lieu of Shares. The former Chairman of the Board of Genentech will receive a new option in replacement for existing options if the 1990 Stock Option/Stock Incentive Plan is approved by stockholders. See "Approval of 1990 Stock Option/Stock Incentive Plan—Special Option."

This Proxy Statement also constitutes the prospectus of Genentech with respect to the options to be issued in exchange for outstanding Employee Stock Options in connection with the Merger, and the information circular for the making of Cash-Out Elections with respect to outstanding Employee Stock Options.

In connection with the execution of the Merger Agreement by Genentech, certain actions were taken with respect to Employee Stock Options that would expire prior to the Effective Time. To the extent held by employees of Genentech who are not subject to Section 16(b) of the Exchange Act, such Employee Stock Options are or will be extended for a period of six months from the date such Employee Stock Options would otherwise have expired. For holders of such Employee Stock Options who are subject to Section 16(b) of the Exchange Act, as permitted by the 1984 Option Plans, Genentech has or will provide loans to such holders for the exercise of such Employee Stock Options. See "Election of Directors—Loans."

For a more complete description of the treatment of Employee Stock Options, see "The Merger Agreement—Treatment of Stock Options and Stock Purchase Rights."

The following table sets forth, as of April 24, 1990, with respect to the five most highly compensated executive officers of Genentech and all executive officers as a group: (i) the aggregate number of Shares subject to Employee Stock Options; (ii) the number of such Shares subject to vested Employee Stock Options; (iii) the number of Shares under Employee Stock Options the vesting of which will be accelerated in connection with the Merger (assuming a Cash-Out Election is made by the optionholder); and (iv) assuming a Cash-Out Election, the cash amount payable to such holder with respect to such Employee Stock Options:

	(i) Aggregate Number of Shares subject to Options	(ii) Number of Shares under Vested Options	(iii) Number of Options Accelerated	(iv) Cash Payable for Options Cashed Out(1)
Robert A. Swanson	338,484	153,817	46,166	$ 4,205,302
G. Kirk Raab	542,308	335,641	51,666	$ 7,913,648
James M. Gower	186,484	89,817	24,166	$ 2,410,552
William D. Young	144,484	67,816	19,166	$ 1,834,891
Louis J. Lavigne, Jr.	168,484	52,441	29,010	$ 1,591,730
All executive officers as a group (22 persons)	2,742,721	1,145,826	399,186	$31,433,600

(1) Does not include amounts payable by Genentech to Messrs. Swanson, Raab, Gower Young, and Lavigne pursuant to agreements originally entered into in October 1989 and requiring that, if amounts received under such agreements (including in connection with Employee Stock Options) will subject the employee to an excise tax under Section 4999 of the Code, the employee will receive an additional payment so that the employee is in the same after-tax position he would have

been in had such payments not resulted in such excise tax. See "Employee Agreements." The calculation of such amounts is dependent upon certain facts not determinable as of the date hereof, including the market price of the Shares at the Effective Time.

The 1987 Plan. The 1987 Plan is an "employee stock purchase plan" intended to qualify under Section 423 of the Code and provides participants with an opportunity to purchase Shares at a discount, subject to certain limitations and restrictions. Approximately 1400 employees of Genentech, including most of its officers, are participants in the 1987 Plan. The 1987 Plan provides that appropriate adjustments will be made to certain terms of the plan and the rights granted thereunder in the event of a merger involving Genentech, and that any agreement of merger will include provisions for the protection of existing rights granted under the plan. See "Election of Directors—1987 Employee Stock Plan." Accordingly, the Merger Agreeement provides for certain adjustments to the 1987 Plan and the rights granted thereunder, which adjustments cause such rights to be exercisable for Redeemable Common Stock and, pursuant to certain formulas set forth in the Merger Agreement, preserve the aggregate discount with respect to the purchase of shares provided to participants in the 1987 Plan. See "The Merger Agreement—Treatment of Stock Options and Stock Purchase Rights."

Employee Agreements. In the fall of 1989, the Board determined that certain of the strategic alternatives it was then considering (see "Background of the Merger") posed significant personal uncertainty to certain individuals who were crucial to the evaluation and implementation of such alternatives. For that reason, in October 1989, the Board of Directors directed Genentech to enter into agreements (the "Agreements") with Mr. Robert A. Swanson, then Chief Executive Officer and currently Chairman of the Board of Genentech, Mr. G. Kirk Raab, then President and Chief Operating Officer and currently President and Chief Executive Officer of Genentech, Mr. James M. Gower, Senior Vice President of Genentech, Mr. William D. Young, Senior Vice President of Genentech, Mr. Louis J. Lavigne, Jr., Vice President and Chief Financial Officer of Genentech, and Mr. John P. McLaughlin, Vice President, Secretary and General Counsel of Genentech which agreements provide certain benefits only in the event of termination of their employment following or as a condition to a change in control of Genentech (the "Agreements"). The Board offered the Agreements to these employees to insulate them from the distractions and the personal uncertainties created by these situations so as to assure that the stockholders and Genentech would have the full benefit of the undivided attention of these employees.

The Agreements provide that, subject to the exceptions indicated below, if (and only if) the covered employee's employment is Involuntarily Terminated (as defined below) (other than a Termination for Cause (as defined in the Agreements)) within thirty-six months following a Change in Control (as defined below), prior to but as a condition of a Change in Control or at the request of a party to the Change in Control (other than Genentech), or on or after a Change in Control and before January 1, 1995, the terminated employee will be entitled to a lump sum severance award equal to five times the sum of the terminated employee's compensation including salary and bonus. In addition, upon Involuntary Termination the terminated employee and his eligible dependents will be entitled to the continuation of medical and dental care benefits for a five-year period and forgiveness of the entire unpaid balance (principal and accrued interest) outstanding at the time of the employee's Involuntary Termination under any outstanding Genentech loan or loans (including any relocation loans, as described under "Election of Directors—Relocation Loan Program", but not including any loans made in connection with the exercise of Incentive Stock Options, as described under "Election of Directors—Loans"). In addition, in the event of his Involuntary Termination, Mr. Swanson would be entitled to a special payment of $1,500,000 in respect of his position as founder of the Company.

"Involuntary Termination" is defined in the Agreements as termination of an employee's employment (i) as a result of an involuntary discharge or dismissal, (ii) voluntarily or involuntarily due to a permanent disability, (iii) voluntarily following (A) a change in the employee's position with Genentech which materially reduces the employee's offices, titles, responsibility, authority, duties, status or reporting responsibilities, (B) a Reduction in Compensation (as such term is defined in the Agreements), or (C) a change in the employee's place of employment which is more than 50 miles from that in effect prior to the Change in Control, provided and only if such change or reduction is effected without the employee's written concurrence. "Change in Control" is defined in the Agreements as (i) the acquisi-

tion by a person or a group, other than Genentech or certain related entities, of securities possessing (whether immediately or upon subsequent conversion or exercise) thirty percent or more of the total voting power of Genentech's outstanding securities, (ii) the acquisition by a person or a group, other than Genentech or certain related entities, of securities possessing (whether immediately or upon subsequent conversion or exercise) the right to elect a majority of Genentech's Board of Directors, (iii) the sale, transfer or other disposition (other than in the ordinary course) of fifty percent or more of the total fair market value of Genentech's assets, or (iv) the first date within any period of thirty-six consecutive months or less on which there is effected a change in the composition of the Board such that a majority of the Board ceases to be comprised of individuals who either (I) have been members of the Board continuously since the beginning of such period or (II) have been elected or nominated for election as Board members during such period by at least a majority of the Board members described in clause (I) who were still in office at the time such election or nomination was approved by the Board; provided such transaction or event occurs prior to January 1, 1995.

The Agreements, prior to their amendment as described in the following paragraph, provided for the immediate exercisability of all then unexercisable Employee Stock Options upon a Change in Control. The accelerated portion of each such accelerated Employee Stock Option would remain exercisable until the expiration of its original term. The Agreements provided for the cash-out of the accelerated portion of each Employee Stock Options under certain conditions, which would have included the Merger, with the proceeds to be placed in an escrow account. The employees would have obtained access to the funds in accordance with the original vesting schedule for the Options but in no event later than two years after a Change in Control. In the event that the employee was Involuntarily Terminated, all proceeds in the escrow account would be made available immediately. Alternatively, if the employee were to voluntarily terminate his employment, the portion of any Shares acquired upon exercise of accelerated Employee Stock Options and the portion of the escrow account that represented proceeds from the cash-out of Employee Stock Options, in each case that would not have vested according to their original vesting schedule, would revert to Genentech. The cash-out under the Agreements was to be based on the fair market value of the Shares on the date of the Change in Control. The Agreements did not provide for any cash-out of vested options.

Roche requested, and in the Merger Agreement Genentech agreed, that prior to the Effective Time Genentech will take all action necessary to ensure that the Employee Stock Options held by persons who are parties to the Agreements will be treated in the same manner as all other Employee Stock Options (i) with respect to the Merger and (ii) with respect to any subsequent exercise by Roche of its rights under the Governance Agreement to representation on the Board of Directors (and its committees) or any acquisition by Roche of securities of Genentech (whether by merger, tender offer, private or market purchases or otherwise) not prohibited by the Governance Agreement that might, in either case, constitute a change in ownership or effective control of Genentech. Accordingly, the employees who are parties to the Agreements have agreed to amend the Agreements to eliminate any special treatment of their Employee Stock Options in connection with the Merger or certain other events. Such Employee Stock Options will instead be treated as described above under "Treatment of Employee Stock Options."

The Agreements provide that if any payments made pursuant to the Agreements or otherwise (including in connection with Employee Stock Options) will subject the employee to an excise tax under Section 4999 of the Code, the employee will receive an additional payment so that the employee is in the same after-tax position he would have been in had such payments not resulted in such excise tax.

If their employment were terminated immediately following consummation of the Merger under circumstances which entitled them to benefits under the Agreements, cash amounts and benefits equal to $6,348,455, $6,564,494, $2,423,329, $2,209,033, $1,950,550 and $1,984,988 would be payable to Messrs. Swanson, Raab, Gower, Young, Lavigne and McLaughlin, respectively, excluding payments with respect to the cash-out of Employee Stock Options and any excise tax gross-up payments with respect to such cash-out referred to under "Treatment of Employee Stock Options." With respect to Mr. Raab, the amounts set forth in the preceding sentence do not include the amounts that would be

payable to Mr. Raab under the agreements between Mr. Raab and Genentech described under "Election of Directors—Executive Compensation."

The Governance Agreement provides that Genentech will not and will not permit any of its subsidiaries to, (i) enter into any contract, agreement, plan or arrangement covering any director, officer or employee of Genentech or any of its subsidiaries that provides for the making of any payments, the acceleration of vesting of any benefit or right or any other entitlement contingent upon (A) the Merger or the exercise by Roche of any of its rights under the Governance Agreement to representation on the Board of Directors (and its committees) or any acquisition by Roche of securities of Genentech (whether by merger, tender offer, private or market purchases or otherwise) not prohibited by the Governance Agreement or (B) the termination of employment after the occurrence of any such contingency if such payment, acceleration or entitlement would not have been provided but for such contingency or (ii) amend any existing contract, agreement, plan or arrangement to so provide. (See "Description of the Governance Agreement.") For a discussion of the effect of a merger or similar transaction on the 1990 Plan, see "Approval of 1990 Stock Option/Stock Incentive Plan—Corporate Transactions; Change in Control" and "—Special Merger Provisions."

Certain Ongoing Litigation

Roche and a third party sued Genentech and certain affiliates in 1986 in the United States District Court for the Northern District of California claiming that the defendants, through the manufacture and sale of recombinant human growth hormone, infringed the claims of a patent issued to the third party and licensed to Roche. In August 1988 the court issued an order granting motions for summary judgment in favor of defendants. Plaintiff's appeal of this order is pending in the United States Court of Appeals for the Federal Circuit. The consummation of the Merger is expected to have no impact on such litigation. Prior to and independent of the execution of the Merger Agreement, the parties to such litigation entered into a settlement agreement providing for most of the possible outcomes of the pending appeal with respect to such litigation.

Certain Licensing Arrangements

In January 1980, Genentech and Hoffmann-La Roche Inc. ("Hoffmann-La Roche") entered into an agreement regarding the development and commercialization of human leucocyte ("alpha") and fibroblast ("beta") interferons. Hoffmann-La Roche is a New Jersey corporation and a subsidiary of Roche.

Pursuant to this agreement, as amended from time to time, Genentech granted Hoffmann-La Roche an exclusive, worldwide license to use and sell (and, under certain circumstances, manufacture) alpha and beta interferons using organisms and knowhow developed by Genentech and under patent rights belonging to Genentech, for a period of 20 years. Pursuant to this agreement, Genentech is entitled to royalties on sales of interferons by Hoffmann-La Roche. Those payments totaled $581,000 in 1988 and $276,000 in the first six months of 1989. A second agreement between Genentech and Hoffmann-La Roche also entered into in January of 1980 reserved to Genentech the option to supply interferons to Hoffmann-La Roche, but Genentech has never elected to do so.

In July 1984, Genentech and Hoffmann-La Roche entered into an agreement jointly to support clinical trials and other research to determine whether there is a synergistic effect between alpha interferon and immune ("gamma") interferon. These trials have since been completed and no further activity under this agreement is contemplated.

In April 1989, Genentech and Hoffmann-La Roche entered into an agreement with The University of Texas M.D. Anderson Cancer Center to support clinical trials of tumor necrosis factor supplied by Genentech and interleukin-2 supplied by Hoffmann-La Roche in patients with disseminated cancer. The clinical trials are on-going.

Federal Income Tax Consequences

Wachtell, Lipton, Rosen & Katz, special counsel to Genentech, are of the opinion that the following are the material federal income tax consequences under currently applicable law, of the Merger, as well as of the ownership of the Redeemable Common Stock, to the holders of Shares who are United

States citizens or resident individuals. It should be noted that an opinion of counsel is not binding on the Internal Revenue Service and no ruling will be requested from the Internal Revenue Service on these or any other issues.

The Merger. The material federal income tax consequences of the Merger to the stockholders are as follows:

1. Under the principles set forth in certain Internal Revenue Service rulings, part of each Share held by a stockholder of Genentech will be considered to have been sold to Roche in the Merger, and the remainder will be considered to have been exchanged in a "recapitalization" of Genentech within the meaning of Section 368(a)(1)(E) of the Code. While there is no authority clearly on point, the portion of each Share deemed sold to Roche would be determined by the ratio which the amount of cash received in respect of such share in the Merger bears to the sum of (a) the amount of such cash plus (b) the fair market value of the shares of Redeemable Common Stock received by the stockholder in respect of such Share.

2. Under Section 354 of the Code, a stockholder will not recognize any gain or loss with respect to the portion of each Share considered to have been exchanged in the recapitalization for a portion of a share of Redeemable Common Stock. The exchanging stockholder's basis in the Redeemable Common Stock received in the recapitalization exchange will be equal to the basis in the portion of the Share exchanged therefor. The holding period of the Redeemable Common Stock received in the exchange will include the period during which the portion of the Share surrendered in exchange therefor was held by the exchanging stockholder, provided that such Share was held as a capital asset.

3. Under Section 1001 of the Code, the stockholder will recognize gain or loss on the exchange of that portion of each Share considered to have been sold to Roche, measured by the difference between his or her basis in such portion of the Share and the amount of cash received. Such gain or loss will be capital gain or loss, provided that such Share was held by the stockholder as a capital asset, and will be long-term if, at the time of the exchange, the Share has been held for more than one year. Although capital gains are currently taxed at the same rates as ordinary income, the distinction between capital gain or loss and ordinary income or loss is relevant, among other things, for purposes of limitations on the deductibility of capital losses. It should be noted that proposals are being considered in Congress to provide for preferential tax treatment for capital gains. It is not possible to predict whether any such changes will be enacted, or the effect of any changes which are enacted on dispositions pursuant to the Merger.

The Redeemable Common Stock. The material federal income tax consequences pertaining to ownership of the Redeemable Common Stock are as follows:

1. Distributions paid with respect to the Redeemable Common Stock will be taxed as dividends under Section 301 of the Code to the extent of Genentech's available earnings and profits for federal income tax purposes. To the extent that distributions on the Redeemable Common Stock exceed the available earnings and profits of Genentech, the amount distributed will be applied to reduce the tax basis in such Redeemable Common Stock and, to the extent that any such amount distributed exceeds such tax basis, will constitute gain from the deemed sale or exchange of such Redeemable Common Stock. Any such gain will be capital gain if the Redeemable Common Stock is held as a capital asset and will be long-term or short-term depending on the holding period for such Redeemable Common Stock.

2. The terms of the Redeemable Common Stock will not cause holders of the Redeemable Common Stock to be deemed to receive stock dividends taxable under Section 305 of the Code.

3. If the Redeemable Common Stock is called as a class and redeemed for cash, the exchanging stockholder will recognize gain or loss under Section 302 of the Code measured by the difference between the basis in the Redeemable Common Stock redeemed and the amount of cash received. Such gain or loss will be capital gain or loss if the Redeemable Common Stock is held as a capital asset, and will be long-term if, at the time of the redemption, the shares of Redeemable Common Stock have been held for more than one year.

Gain or loss on the sale of Redeemable Common Stock will be capital gain or loss if such stock is held as a capital asset.

The Redeemable Common Stock will not be "Section 306 stock" within the meaning of Section 306(c) of the Code. Accordingly, the provision of Section 306 will not apply to dispositions of the Redeemable Common Stock.

4. Under Section 354 of the Code, no gain or loss will be recognized for federal income tax purposes upon the conversion of Redeemable Common Stock into shares of Common Stock. The basis for the shares of Common Stock received upon conversion will be equal to the basis of the Redeemable Common Stock converted and, provided that the shares of Redeemable Common Stock were held as a capital asset, the holding period of the shares of Common Stock will include the holding period of the Redeemable Common Stock.

5. Under certain circumstances, a holder of Shares or Redeemable Common Stock may be subject to "backup withholding." This withholding applies only if the holder, upon issuance, among other things, (i) fails to furnish Genentech with his taxpayer identification number, (ii) furnishes Genentech with an incorrect taxpayer identification number, (iii) fails properly to report interest or dividends, or (iv) under certain circumstances fails to provide Genentech or his securities broker with a certified statement, under penalty of perjury, that he is not subject to withholding. The withholding rate is 20% of "reportable payments," such as cash proceeds received in the Merger and dividend payments with respect to the Redeemable Common Stock made during the calendar year. **Holders of Shares and Redeemable Common Stock should consult with their tax advisors as to their qualification for exemption from withholding and the procedure for obtaining such an exemption.** Reports will be furnished to the holders of Shares and Redeemable Common Stock and the Internal Revenue Service for each calendar year stating the amount of reportable payments paid during such year and the amount of tax withheld, if any, with respect thereto.

Special Considerations. The foregoing discussion may not be applicable with respect to stockholders in special categories for tax purposes, including corporate and foreign stockholders and stockholders who acquired their Shares pursuant to the exercise of employee stock options or otherwise as compensation. Such discussion does not address the tax consequences of the Merger to holders of options, warrants or convertible securities.

EACH STOCKHOLDER SHOULD CONSULT HIS OWN TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO HIM OF THE MERGER AND THE OWNERSHIP, EXCHANGE, REDEMPTION OR SALE OF THE REDEEMABLE COMMON STOCK, INCLUDING THE APPLICATION OF STATE, LOCAL AND FOREIGN TAX LAWS AND POSSIBLE FUTURE CHANGES IN FEDERAL TAX LAWS.

Certain Legal Matters

Certain acquisition transactions such as the Merger are reviewed by the Justice Department or the FTC to determine whether they comply with applicable antitrust laws. Under the provisions of the HSR Act, the Merger may not be consummated until certain information has been furnished to the Justice Department and the FTC and certain waiting period requirements of the HSR Act have been satisfied. Certain information was filed with the Justice Department and the FTC under the HSR Act by Genentech on February 26, 1990 and by Roche on February 23, 1990. On March 23, 1990, the FTC issued Requests for Additional Information (the "Requests") to both Genentech and Roche with respect to the Merger. Pursuant to the HSR Act, the waiting period will not expire until 20 calendar days following the substantial compliance by both parties with the Requests, unless it is earlier terminated by the FTC. No other extensions of the waiting period are authorized by the rules promulgated by the HSR Act. Neither Genentech nor Roche can currently predict when they will have substantially complied with the Request issued to it. Consummation of the Merger is conditioned upon the expiration or termination of the applicable waiting period under the HSR Act relating to the Merger.

At any time before or after the Merger, the FTC could take such action under the antitrust laws as it deems necessary or desirable in the public interest, including seeking to enjoin the Merger or the divestiture of substantial assets of Roche or Genentech. Private parties may also bring legal action

under the antitrust laws under certain circumstances. There can be no assurance that a challenge to the Merger on antitrust grounds will not be made or, if a challenge is made, what the result will be. Consummation of the Merger is conditioned upon, among other things, the absence of any provisions of any applicable law or regulation and any judgment, injunction, order or decree that will prohibit the consummation of the Merger. The obligations of Roche to consummate the Merger are also conditioned upon, among other things, the absence of any judgment, decree or order of any court or governmental authority of competent jurisdiction prohibiting Roche at any time after the Effective Time from exercising all material rights and privileges pertaining to its ownership of the Shares to the extent permitted by the Governance Agreement; provided that Roche will not be entitled to assert this condition unless Roche has used and is continuing to use all reasonable efforts to oppose such judgment, decree or order and to avail itself of all rights of appeal.

The Exon-Florio Amendment, enacted as part of the Omnibus Trade and Competitiveness Act of 1988, gives the Committee on Foreign Investment in the United States ("CFIUS") the authority to review the effects on national security of certain mergers and acquisitions involving foreign acquirors. If CFIUS determines that a proposed or completed acquisition poses a threat to national security, it may prohibit the transaction or seek divestment following a completed transaction. Roche and Genentech notified CFIUS of the Merger on March 2, 1990. On March 28, 1990, CFIUS notified Roche and Genentech that it had determined, based on its review of information submitted by Roche and Genentech, that there are no issues of national security sufficient to warrant an investigation by CFIUS into the Merger.

Except as disclosed herein, Genentech and Roche are not aware of any federal, state or foreign governmental or regulatory approval that is required in order to consummate the Merger. Should any such approval be required, it is currently contemplated that such approval would be sought.

The Commission is conducting an inquiry with respect to trading in Genentech securities during the period shortly prior to the public announcement of the signing of the Merger Agreement. Genentech has cooperated fully with the Commission in its inquiry. Genentech understands that a focus of the inquiry involves certain communications between the wife of G. Kirk Raab and a member of her family prior to the public announcement of the Merger and subsequent trading in Genentech securities by persons other than Mrs. Raab. Mrs. Raab at the time of such communications was aware of the prospective transaction from her husband. Both Mr. and Mrs. Raab have cooperated fully with the Commission in this inquiry. Genentech does not believe that it or Mr. Raab is the subject of any investigation. Genentech believes that Mr. Raab exercised proper care with respect to maintaining the confidential treatment of information concerning the proposed transaction.

Certain Litigation Relating to the Merger Agreement

Four purported class action complaints have been filed with respect to the Merger in the Court of Chancery, State of Delaware, County of New Castle. *Rosman et al.* v. *Genentech, Inc., et al.* (Civil Action No. 11377); *Mintz et al.* v. *Genentech, Inc., et al.* (Civil Action No. 11382); *Krim* v. *Genentech, Inc., et al.* (Civil Action No. 11383); and *Weinberger et al.* v. *Genentech, Inc., et al.* (Civil Action No. 11381). Each of these actions (the "Delaware Actions") contains substantially the same allegations and seeks substantially the same relief. Named as defendants in each of the Delaware actions are Genentech and each of its directors. Plaintiffs in each of the actions are purported stockholders of Genentech and they purport to sue on behalf of a class consisting of Genentech's current stockholders (excluding management and directors). The complaints in the Delaware Actions allege, among other things: that stockholders will suffer dilution as a result of the Merger; that the Merger and related transactions will result in the current stockholders of Genentech being deprived of control of Genentech; that the stockholders of Genentech will receive inadequate compensation for their shares in the Merger; that the Merger and related transactions are unfair and inadequate, and that the intrinsic value of the equity of Genentech is materially greater than the consideration being offered in the Merger and related transactions taking into account Genentech's expected growth, the strength of its business, cash flow, assets and earning power; that the Merger was agreed to at a point when Genentech's growth and earnings had exceeded previous growth and earnings; and that as a result of the options granted to Roche, the market price for Genentech's stock has been effectively capped and

Roche has acquired the right to benefit from future growth of Genentech (or to limit its investment should the growth not materialize). In addition, the Delaware Actions allege that the Merger and related transactions are a change of control or sale of Genentech and that Genentech was obliged to conduct an auction with respect to such sale; that Genentech has not explored all possibilities to obtain a higher price for Genentech and has not sought or encouraged other possible purchasers of and offers for the assets of Genentech or its stock; that the Merger and related transactions are coercive devices which constitute a manipulative and deceptive scheme to bypass other potential acquirors; that the directors of Genentech are carrying out a preconceived plan to thwart a fair and open auction of Genentech that would maximize stockholder value, in order to protect the directors' alleged personal pecuniary interest at the expense of public shareholders. As relief, the Delaware Actions seek: a declaration that the defendants have committed a gross abuse of trust and have breached their fiduciary duties to the stockholders; a declaration that the Merger Agreement, the Merger, and related transactions and agreements are a "legal nullity"; a preliminary and permanent injunction against proceeding with the Merger and related transactions; rescission of the Merger in the event it is consummated; compensatory damages in an unspecified amount; and plaintiffs' counsel fees and expenses.

One purported class and derivative action has been filed in the Superior Court of the State of California, County of San Francisco. *Genentech, Inc., by Allan H. Cetron, et al.* v. *Swanson et al.*, Case No. 915781 (the "California Action"). Named as defendants in the California Action are the directors of Genentech, Roche Holding, and John Does 1 through 100. In addition, the plaintiffs purport to name Genentech as a derivative plaintiff, a nominal defendant and an actual defendant. Plaintiffs in the California Action are purported shareholders of Genentech. The causes of action listed in the complaint in the California Action are intentional breach of fiduciary duty; negligent breach of fiduciary duty; constructive fraud; unjust enrichment; fraud and deceit; negligent misrepresentation; interference with economic advantage and injunctive relief. Each of the claims in the California Action is purportedly brought derivatively on behalf of Genentech and as a class claim on behalf of a purported class of public stockholders of Genentech.

The complaint in the California Action alleges, among other things: that the Merger and related transactions were negotiated by stealth without affording other bidders the opportunity to make a more favorable offer for Genentech; that the Merger and related transactions have the effect of unfairly and artificially "capping" or limiting the market price of the stock of Genentech because of the prices assigned to approximately 40% of the stock in the options granted to Roche; that the Merger will entrench the defendants; that defendants' motivation for agreeing to the Merger was to insulate themselves from accountability to the public shareholders arising out of previous class and derivative litigation, and to continue to receive salaries and other pecuniary benefits as a result of their positions; that the Merger will constitute a change of control of Genentech; that the Merger and related transactions will cause stockholders to suffer dilution; that the public stockholders of Genentech will receive inadequate compensation for their shares; that the Merger was agreed to at a point when Genentech has exceeded previous growth and earnings; that the Merger and related transactions are unfair and inadequate to the public stockholders of Genentech; that the intrinsic value of the equity of Genentech is materially greater than the consideration being offered, taking into account Genentech's expected growth, the strength of its business, its cash flow, assets and earnings power. In addition, the complaint in the California Action alleges that the Merger and related transactions constitute a change in control or sale of Genentech obligating defendants to conduct an auction; that defendants have not explored all possibilities to obtain a higher price for Genentech and have not sought or encouraged other possible purchasers of and offers for the assets of Genentech or its stock; that the defendants have breached their fiduciary duties to the stockholders; that the Merger and related transactions are coercive devices which constitute a manipulative and deceptive scheme to bypass potential acquirors other than Roche; that the individual defendants are carrying out a preconceived plan to thwart a fair and open auction of Genentech that would maximize stockholder value and to protect their personal pecuniary interests at the expense of the public stockholders; that defendants have failed to disclose the full extent of the future earnings potential of Genentech and its expected increase in profitability, as well as the current value of its assets; that if Genentech were sold by an auction process, "it is likely that Genentech's common shareholders would realize an amount substantially in excess of the

proposed Roche buyout price and terms"; that the terms of the Merger and related transactions have been set by the defendants alone without having offered Genentech to any other potential bidder and without having fostered a legitimate bidding process; that the Merger and related transactions are not the result of arm's length negotiations, are not based upon adequate, independent evaluations of the current value of Genentech's common stock, assets, or business; and that defendants have made confidential and proprietary business and corporate information available to Roche but not to other potential bidders.

The complaint in the California Action further alleges that the defendants have intentionally and negligently breached their fiduciary duties to the public stockholders of Genentech; that defendants have made misrepresentations to, and concealed material facts from, Genentech concerning the "prospects" for which the Merger was undertaken, and thus have committed constructive fraud; that defendants will be unjustly enriched by their conduct; that defendants have intentionally and negligently made false and misleading reports and releases that failed to disclose the "true facts" concerning defendants' intentions regarding the Merger and related transactions, for the purpose of inducing stockholders to acquiesce in defendants' conduct; that such "true facts" concerning defendants' intentions were intentionally and negligently concealed from Genentech; and that defendants' public statements were a "cover up" intended to deceive the public. The complaint in the California Action further alleges that defendants have willfully and intentionally perpetrated a fraud upon the public stockholders; that all stockholders of Genentech have the expectancy of sharing equally in any sale, merger or reorganization of Genentech, and that the Merger and related transactions destroy this expectancy. Each of the claims in the California Action is purportedly brought derivatively on behalf of Genentech and as class claims on behalf of a purported class of public stockholders of Genentech. As relief, the complaint in the California Action seeks, among other things: a declaration that the defendants have breached their fiduciary duties to Genentech and its stockholders; a preliminary and permanent injunction against consummation of the Merger; a preliminary and permanent injunction "removing all inhibitions to open bidding for [Genentech]" by all interested persons; a preliminary and permanent injunction against all agreements intended to have the effect of impeding third-party offers for stock or assets of Genentech; a preliminary and permanent injunction granting all interested third party buyers equal access to corporate proprietary and confidential business information; compensatory damages in an unspecified amount; an accounting by defendants of all profits, special benefits and unjust enrichment they have allegedly obtained; punitive damages in an unspecified amount; and plaintiffs' counsel's fees and expenses.

Both the Delaware Actions and the California Action are in the preliminary stages of litigation. The plaintiffs in the Delaware Actions have informed Genentech that they intend to apply for a preliminary injunction against the consummation of the Merger. The plaintiffs in the Delaware Actions have requested that a hearing on this motion be held on or about May 18, 1990. Genentech believes that it and all other named defendants have substantial defenses to all of the claims made in the Delaware Actions and the California Action, and Genentech intends vigorously to contest the Delaware Actions and the California Action.

Stockholders' Appraisal Rights

If the Merger is consummated, dissenting holders of Shares will be entitled to have the "fair value" (exclusive of any element of value arising from the accomplishment or expectation of the Merger) of their Shares ("Dissenting Shares") at the Effective Time judicially determined and paid to them by complying with the provisions of Section 262 of the Delaware Law ("Section 262").

The following is a brief summary of Section 262, which sets forth the procedures for dissenting from the Merger and demanding statutory appraisal rights. This summary does not purport to be a complete statement of the provisions of the Delaware Law relating to the rights of stockholders of Genentech to an appraisal of the value of their Shares and is qualified in its entirety by reference to Section 262, the full text of which is attached hereto as Annex B. Failure to follow such procedures exactly could result in the loss of appraisal rights.

Stockholders who desire to exercise their appraisal rights must satisfy all of the conditions of Section 262. A written demand for appraisal of Shares must be filed with Genentech before the taking of the vote on the Merger Proposal. This written demand for appraisal of Shares must be in addition to and separate from any proxy vote abstaining from or voting against the Merger Proposal. Voting against, abstaining from voting or failing to vote on the Merger Proposal will not constitute a demand for appraisal within the meaning of Section 262.

Stockholders electing to exercise their appraisal rights under Section 262 must not vote for approval of the Merger Proposal. If a stockholder returns a signed proxy but does not specify a vote against approval of the Merger Proposal or a direction to abstain, the proxy will be voted for approval of the Merger Proposal, which will have the effect of waiving that stockholder's appraisal rights.

A demand for appraisal must be executed by or for the stockholder of record, fully and correctly, as such stockholder's name appears on the Share certificate. If the Shares are owned of record in a fiduciary capacity, such as by a trustee, guardian or custodian, such demand must be executed by or for the fiduciary. If the Shares are owned of record by or for more than one person, as in a joint tenancy or tenancy in common, such demand must be executed by or for all joint owners. An authorized agent, including an agent for two or more joint owners, may execute the demand for appraisal for a stockholder of record; however, the agent must identify the record owner and expressly disclose the fact that, in exercising the demand, he is acting as agent for the record owner.

A record owner, such as a broker, who holds Shares as a nominee for others may exercise his right of appraisal with respect to the Shares for all or less than all beneficial owners of Shares as to which he or she is the record owner. In such case, the written demand must set forth the number of Shares covered by such demand. Where the number of Shares is not expressly mentioned, the demand will be presumed to cover all Shares outstanding in the name of such record owner.

A stockholder who elects to exercise appraisal rights should mail or deliver his or her written demand to John P. McLaughlin, Secretary, Genentech, Inc., 460 Point San Bruno Boulevard, South San Francisco, California 94080. The written demand for appraisal should specify the stockholder's name and mailing address, and that the stockholder is thereby demanding appraisal of his or her Shares. Within ten days after the Effective Time, Genentech must provide notice of the Effective Time to all stockholders who have complied with Section 262 and have not voted for approval of the Merger Proposal.

Within 120 days after the Effective Time, any stockholder who has satisfied the requirements of Section 262 may deliver to Genentech a written demand for a statement listing the aggregate number of Shares not voted in favor of the Merger Proposal and with respect to which demands for appraisal have been received and the aggregate number of holders of such Shares.

Within 120 days after the Effective Time, either Genentech or any stockholder who has complied with the required conditions of Section 262 may file a petition in the Delaware Court demanding a determination of the fair value of the Dissenting Shares. Genentech has no present intention to file such a petition if demand for appraisal is made.

Upon the filing of any such petition by a stockholder, service of a copy thereof shall be made upon Genentech which shall, within 20 days after such service, file in the office of the Register of Chancery in which the petition was filed, a duly verified list containing the names and addresses of all stockholders who have demanded payment for their Shares and with whom agreements as to the value of their Shares have not been reached by Genentech. If the petition shall be filed by Genentech, the petition shall be accompanied by such verified list. The Register of Chancery, if so ordered by the Court, shall give notice of the time and place fixed for the hearing of such petition by registered or certified mail to Genentech and to the stockholders shown upon the list at the address therein stated, and notice shall also be given by publishing a notice at least one week before the day of the hearing in a newspaper of general circulation published in the City of Wilmington, Delaware or such publication as the Court deems advisable. The forms of the notices by mail and by publication shall be approved by the Court.

If a petition for an appraisal is filed in a timely fashion, after a hearing on such petition, the Court will determine which stockholders are entitled to appraisal rights and will appraise the Shares owned by such stockholders, determining the fair value of such Shares, exclusive of any element of value

arising from the accomplishment or expectation of the Merger, together with a fair rate of interest to be paid, if any, upon the amount determined to be the fair value. In determining fair value, the Court is to take into account all relevant factors. In *Weinberger* v. *UOP, Inc. et al.*, the Delaware Supreme Court stated that "proof of value by any techniques or methods which are generally considered acceptable in the financial community and otherwise admissible in court" should be considered, and that "fair price obviously requires consideration of all relevant factors involving the value of the Company. . . ." The Delaware Supreme Court stated that in making this determination of fair value the Court must consider market value, asset value, dividends, earnings prospects, the nature of the enterprise and any other facts which could be ascertained as of the date of the merger which throw any light on future prospects of the merged corporation. Section 262 provides that fair value is to be "exclusive of any element of value arising from the accomplishment or expectation of the merger." In *Weinberger*, the Delaware Supreme Court held that the "elements of future value, including the nature of the enterprise, which are known or susceptible of proof as of the date of the merger and not the product of speculation, may be considered."

Stockholders considering seeking appraisal of their Shares should note that the fair value of their Shares determined under Section 262 could be more, the same or less than the consideration they would receive pursuant to the Merger Agreement if they did not seek appraisal of their Shares. The costs of the appraisal proceeding may be determined by the Court and taxed against the parties as the Court deems equitable in the circumstances. Upon application of a dissenting stockholder, the Court may order that all or a portion of the expenses incurred by any dissenting stockholder in connection with the appraisal proceeding including, without limitation, reasonable attorneys' fees and the fees and expenses of experts, be charged pro rata against the value of all Shares entitled to appraisal. In the absence of such a determination or assessment, each party bears his or her own expenses.

Any stockholder who has duly demanded appraisal in compliance with Section 262 will not, after the Effective Time, be entitled to vote for any purpose the Shares subject to such demand or to receive payment of dividends or other distributions on such Shares, except for dividends or distributions payable to stockholders of record at a date prior to the Effective Time.

At any time within 60 days after the Effective Time, any stockholder shall have the right to withdraw his or her demand for appraisal and to accept the terms offered in the Merger Agreement. After this period the stockholder may withdraw his or her demand for appraisal and receive payment for his or her Shares as provided in the Merger Agreement only with the consent of Genentech. If no petition for appraisal is filed with the Court within 120 days after the Effective Time, stockholders' rights to appraisal will cease and stockholders will be entitled to receive the Merger Consideration as provided for in the Merger Agreement. Inasmuch as Genentech has no obligation to file such a petition, any stockholder who desires such a petition to be filed is advised to file it on a timely basis. No petition timely filed in the Court demanding appraisal shall be dismissed as to any stockholder without the approval of the Court, and such approval may be conditional upon such terms as the Court deems just.

Roche has agreed in the Merger Agreement to indemnify Genentech for any payment made in settlement of any demand received by Genentech for the appraisal of Shares. Pursuant to the Merger Agreement, Genentech will give Roche prompt notice of any such demands received by Genentech, and Roche will have the right to participate in all negotiations and proceedings with respect to such demands. Genentech will not, except with the prior written consent of Roche, make any payment with respect to, or settle or offer to settle, any such demands.

There will be no appraisal rights arising as a result of redemption of the Redeemable Common Stock.

Certain Restrictions on Roche Following the Merger

Acquisitions. The Governance Agreement provides that following the Merger Roche will not acquire any Equity Security of Genentech if immediately after such acquisition Roche Holding's Voting Interest would exceed 75%, except through (i) causing Genentech to redeem the Redeemable Common Stock or (ii) through transactions permitted under the restrictions described in "Mergers" below.

Under the Governance Agreement, in no event will Roche make any tender offer for Equity Securities of Genentech without the consent of the majority of the Independent Directors. For the definitions of "Equity Security," "Roche Holding's Voting Interest" and "Independent Director" see "The Governance Agreement — Further Acquisitions of Genentech Securities by Roche."

Transfers. The Governance Agreement provides that Roche will not (other than to any entity that is directly or indirectly 100% owned by Roche Holding) sell or otherwise transfer any Shares or shares of Redeemable Common Stock except (i) subsequent to April 30, 1996 or such earlier time as it shall have become illegal for Roche Holding to continue to own the Shares directly or indirectly or to exercise fully all rights of ownership with respect to the Shares, pursuant to a registered underwritten public offering or in compliance with the volume and manner of sale requirements of Rule 144 promulgated under the Securities Act (whether or not such requirements are legally applicable); or (ii) after June 30, 1995 and so long as Roche Holding's Voting Interest is not below 50%, under certain circumstances, in a Liquidating Sale. A "Liquidating Sale" means a sale of all Shares and shares of Redeemable Common Stock beneficially owned by Roche Holding to any person or group that is acquiring or has proposed to acquire all outstanding voting stock of Genentech at a per share consideration having at least the same value, and to be paid in the same form as (or in cash), and not later than, the per share consideration to be paid to Roche and its affiliates. The participation of Genentech's public stockholders in any such transaction would be subject to the approval of the Independent Directors and a majority of such public stockholders.

The Governance Agreement provides that in the event Roche sells any Shares in an underwritten public offering or pursuant to Rule 144 prior to April 30, 2000 (a "Triggering Disposition"), it will use its best efforts to sell additional Shares within three years of the Triggering Disposition such that it will beneficially own not more than 20% of the outstanding Shares. After a Triggering Disposition, Roche will no longer have certain rights with respect to corporate governance, among other things, and the Redeemable Common Stock will be automatically converted to Shares.

Board of Directors; Voting. From the Effective Time until July 1, 1995, the Board will include up to two nominees designated by Roche. After July 1, 1995 the Board will include up to two nominees designated by Roche and two officers of Genentech nominated by the nominating or proxy committee of the Board. The remainder of the Board will be comprised of Independent Directors. Upon its request, after July 1, 1995, Roche will be entitled to designate nominees for a number of such Independent Directors equal to Roche Holding's Voting Interest times the total number of such Independent Directors, rounded up to the next whole number if Roche Holding's Voting Interest is greater than 50% and rounded down to the next whole number if Roche Holding's Voting Interest is less than or equal to 50%. Notwithstanding the foregoing, (i) the number of Independent Directors designated by Roche will not exceed 50% after any Triggering Disposition and (ii) Roche will have no right to designate any nominees for directors pursuant to the Governance Agreement at any time after Roche Holding's Voting Interest has fallen below 20%. Whenever necessary to maintain the proportionality of the Board required by the Governance Agreement, Roche will cause directors designated by Roche to resign from the Board. At such time as Roche Holding's Voting Interest falls below 20%, Roche will cause all the Investor Directors (those directors nominated by Roche pursuant to the Governance Agreement) to resign from the Board.

The Governance Agreement provides that no individual designated by Roche will serve as a director unless such individual has such business or technical experience, stature and character as is commensurate with service on the board of a publicly held enterprise. No such individual who is an officer, director, partner or principal stockholder of any competitor of Genentech and its subsidiaries (other than Roche and its affiliates) will serve as a director of Genentech.

The Governance Agreement provides that in any election of directors, Roche will vote its Shares and shares of Redeemable Common Stock for all nominees in proportion to the votes cast by the other holders of Redeemable Common Stock (excluding, at Roche's option, any votes cast by any person that beneficially owns at least 12% of the Equity Securities not beneficially owned by Roche Holding); provided that it may cast all of its votes in favor of any nominee designated by it pursuant to the Governance Agreement. The Governance Agreement also provides that one of the directors to be

designated by Roche will be a member of the nominating or proxy committee of Genentech's Board of Directors, which committee will have the exclusive authority to nominate as the Board's nominees individuals to fill all Board positions, except for those to be designated by Roche on and after July 1, 1995 pursuant to the Governance Agreement. With respect to any election of directors, any nomination by the proxy or nominating committee of a person other than an incumbent director will require the unanimous approval of such nominating or proxy committee, except that the directors designated or nominated by Roche will not require such unanimous approval.

Mergers. The amended Article Eleventh of the Certificate of Incorporation will provide that, in addition to any affirmative vote required by law or any other provision of the Certificate of Incorporation, any Business Combination (as defined under "Description of Amendments to the Certificate of Incorporation") with Roche or any affiliate of Roche will require (i) approval of the affirmative vote of the holders of at least 50% of the voting power of the then outstanding Voting Stock (as defined therein) not beneficially owned by Roche and its affiliates and (ii) the approval of a majority of the members of the Board who are Independent Directors. See "Description of Amendment of the Certificate of Incorporation."

The Governance Agreement provides that Roche will not propose a Business Combination (as such term is used in Article Eleventh of the Certificate of Incorporation) prior to June 30, 1995, unless a majority of the Independent Directors determine that there has been a sustained, substantial impairment of the business, prospects or financial viability of Genentech and its subsidiaries. In addition, Roche agreed not to propose any such Business Combination from July 1, 1995 until June 30, 1996 at a price per share of the common stock into which the Redeemable Common Stock will have been converted on June 30, 1995 less than the price per share at which Roche could have purchased the Redeemable Common Stock on such date. The Governance Agreement provides that for purposes of the approval of the Board of Directors required under Article Eleventh of the Certificate of Incorporation for any Business Combination permitted by the Governance Agreement, the Independent Directors will consider whether the Business Combination is fair to the minority stockholders of Genentech without taking into account any possible discount due to the fact that there exists a controlling stockholder of Genentech. See "The Governance Agreement."

Standstill Provisions. The Governance Agreement provides that after a Triggering Disposition, Roche will not, without the prior written consent of the Board, acting alone or as part of a group, acquire or offer or agree to acquire, directly or indirectly, by purchase or otherwise, any Equity Securities or all or any substantial portion of the assets of, or otherwise seek to influence or control, in any manner whatsoever, the management or policies of Genentech until the fifteenth anniversary of the date it ceases to beneficially own more than 20% of the outstanding Shares, provided that the foregoing will not apply to any of Roche's portfolio managers whose investment decisions are not directed by Roche.

Guaranty by Roche Holding. Pursuant to a Guaranty Agreement, dated as of February 2, 1990 (the "Guaranty"), Roche Holding has agreed, for itself and its affiliates, to be bound by the provisions of the Governance Agreement, and to abide, and to cause its affiliates to abide, by the obligations and limitations set forth therein, as if it were Roche.

Certain Projected Financial Information

In the course of Roche's due diligence review of Genentech, Genentech provided Roche with certain non-public information concerning Genentech. Such information included, among other things, certain projected financial information prepared by management of Genentech during the fall of 1989, which is set forth below. Such projections were predicated on certain assumptions that do not give effect to the Merger or to any affiliation between Genentech and Roche following the Merger. In addition, such projections were not prepared by Genentech with a view to publication nor with a view toward complying with published guidelines of the Commission or the American Institute of Certified Public Accountants regarding projections and forecasts, although Genentech does not believe that the procedures used in preparing such projections differed materially from such guidelines. Such projections are included herein only because they were provided to Roche. Genentech's independent auditors have not performed any procedures with respect to the projected financial information. Genentech

also delivered projected financial information to various other parties that had entered into confidentiality agreements with Genentech.

	Projected Years Ended December 31,										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	(In millions, except per share figures)										
Revenues	$467	$585	$ 732	$1,034	$1,459	$1,853	$2,129	$2,454	$2,907	$3,398	$ 4,010
Net income	$ 57	$ 67	$ 101	$ 176	$ 373	$ 484	$ 590	$ 716	$ 891	$1,073	$ 1,313
Net income Per share	$.65	$.75	$1.10	$1.86	$3.79	$4.80	$5.74	$6.85	$8.38	$9.92	$11.95

The projections set forth above are necessarily based upon assumptions with respect to Genentech, the pharmaceutical and biotechnology industries, general business and economic conditions, and other matters, which are inherently uncertain and involve numerous factors beyond Genentech's control. To the extent that such projections reflect the anticipated sales performance of the two products currently marketed by Genentech and the two products currently licensed by Genentech to third parties, such projections were developed based upon certain information, in the nature of estimates, forecasts and projections, provided to management of Genentech by members of Genentech's staff. The anticipated sales performance of potential new products that are currently in various stages of Genentech's research and development process, and new indications for existing products, were generated for purposes of the projections from estimates of the potential markets for such products based upon analyses of the patient populations for the health conditions to be treated by such products and estimates of sale prices for such products. The projections assumed that such new products will in fact be developed, will be effective, will obtain all necessary governmental approvals and will be introduced into the market, all in accordance with management's current plans with respect to such products and prior to the introduction of any competitive products. However, in light of the uncertainties inherent in any predictions as to when or whether the development of such products can be successfully completed (including any prediction as to whether or when any required governmental approvals would be obtained), management reduced such potential sales for new products and new indications by 50% in arriving at the projections set forth above. Management believed that this reduction, although subjective, is appropriate in light of the risks involved in Genentech's business.

The projections set forth above have not been updated in any manner. Specifically, the projections do not take into account any possible adverse impacts on Genentech's revenues that could arise in connection with the results of pending clinical trials involving Genentech's products, including the results of the GISSI-2 Study which were reported in March 1990. The GISSI-2 Study compared an equivalent of Activase® t-PA, one of Genentech's two principal revenue generating products, marketed by a licensee of Genentech, with streptokinase, a competitive product which is significantly less expensive than Activase t-PA. Activase t-PA accounted for approximately 50% of Genentech's revenues in 1989. The GISSI-2 Study indicated, among other things, that Activase t-PA and streptokinase were equally effective in saving lives of heart attack victims. The results of the GISSI-2 Study are expected to lead to a decrease in the share of Activase t-PA in the thrombolytic market and could have a negative impact on sales of Activase t-PA, although it is not currently known if such impact will be material.

The methods and assumptions used in preparing the projected financial information set forth above involved significant elements of subjective judgment which may or may not prove to be correct. Further, management recognized that the across-the-board reduction applied in the projections (to the extent they relate to or are derived from the potential sales of new products and new indications) does not systematically take into account the possibility that some or all of the projected new products and indications may not be successfully developed within the ten-year period. Accordingly, such projected financial information is not necessarily indicative of future performance of Genentech, which may be significantly less favorable or more favorable than as set forth above. The inclusion of such projected financial information herein should not be regarded as a representation by Genentech that the projected results indicated will be achieved. Because such projected financial information is inherently subject to uncertainty, Genentech assumes no responsibility for its accuracy.

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Glenn E. Bugos

Since 1994 has served as principal historian with The Prologue Group, a corporate history consulting firm. He received his Ph.D. in 1988 from the University of Pennsylvania, through the Department of History and Sociology of Science, Technology, and Medicine. He has published on the history of biotechnology, aerospace, and other topics in the recent history of business and technology.